The New England
Journal of Medicine

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Volume 235 DECEMBER 12, 1946 Number 24

TRICHINOSIS

A Review of Cases in Massachusetts from 1936 to 1945

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FOR many years, concerted attempts have been made through the press, magazine articles, popular pamphlets and other channels to impress on the public the danger of contracting trichinosis. Such catch phrases as "Perils of pink pork"[1] and "Why don't we trim trichinosis?"[2] have been useful in attracting the attention of the general public to the dangers inherent in insufficiently cooked pork. Recently, the death of a Massachusetts physician from a proved trichinella infection indicates that it is difficult even for a highly trained person to recognize improperly cooked pork. Undoubtedly, much pork is consumed daily that harbors trichinae. Nor can it be denied that many cases of human infection are not recognized by the patient or the physician. Hall and Collins,[3] in 1937, and Nolan and Bozicevich,[4] in 1938, routinely examined the diaphragms at autopsy of 1000 consecutive patients in whom the diagnosis of trichinosis had not been considered clinically. They found *Trichinella spiralis* in 174 cases — an incidence of 17.4 per cent. Numerous other investigators have made similar studies of autopsy material in various parts of the country and reported varying results.[5–8] Evans[9] observed *T. spiralis* in 36 per cent of 100 postmortem cases. There can be no question, therefore, that human infection with trichinae is a relatively frequent condition, probably being present in about 15 per cent of all cases at autopsy.

In Massachusetts, although trichinosis is not reported with great frequency, it cannot be considered a rare disease. In the ten-year period 1936–1945, a total of 287 cases were reported to the Massachusetts Department of Public Health, with death in 7 cases, a mortality of 2 per cent (Table 1). No particular section of the Commonwealth appears to be either immune or subject to an unduly high incidence of the disease; cases have been reported with regularity from all areas (Fig. 1). A total of eighty-one different communities reported one or more cases during this ten-year period. Owing to many factors, however, there can be little doubt that many more patients were so mildly ill as never to come under medical care. Attention is usually directed to cases occurring in groups or in so-called "epidemic" form; single cases may escape detection.

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EPIDEMIOLOGY

Trichinosis is caused by a small parasitic nematode — *T. spiralis* — that was first recognized in 1835 by Owen. Encysted forms of larvae present in infested pork are ordinarily responsible for the origin of the human infection. Human gastric juices destroy the encysting capsule, freeing the contained worms, which then pass on into the duodenum and jejunum and mature into adult male and female forms. Copulation ensues, the male worms die and the females bore into the intestinal villi to reach the lymph spaces, where their eggs are deposited. These rapidly hatch to the larval stage and are carried via the thoracic duct to the lung capillaries and heart. The larvae are then disseminated from the heart into the peripheral arterial system and reach the distal capillaries. Sites especially prone to involvement with larvae are the eyelids, diaphragm and striated muscles, especially the gastrocnemius and deltoid. Active migration of the larvae occurs as they pass from the blood vessels and penetrate into muscle fibers. If a larva fails to penetrate a striated muscle fiber, it is

TABLE 1. *Statistics in Cases of Trichinosis in Massachusetts*

YEAR	NO. OF CASES	NO. OF DEATHS
1936	36	2
1937	21	1
1938	29	1
1939	14	1
1940	46	2
1941	50	0
1942	19	0
1943	13	0
1944	31	0
1945	28	0
	287	7

quickly surrounded by a focus of acute inflammatory exudate and destroyed. Since the adult worms in the intestines live about four or five weeks, they may produce larvae for a prolonged period. With death, the adult worms are discharged in the feces. Larvae that reach a locus within a muscle fiber grow somewhat in length, assume a spiral form and become encysted, remaining alive and capable of development for many years. Many such cysts become calcified, and the contained larvae tend to die after a number of years.[10]

Porcine infestations undergo the same course. Rats have also been mentioned frequently as sources of *T. spiralis*, although their exact role in the transmission seems to be somewhat obscure.[11] Those who

FIGURE 1. *Massachusetts Communities Reporting Trichinosis during 1936–1945.*

have watched rats feeding in the troughs from which swine are fed can readily realize their importance in this respect. In addition, *T. spiralis* has been described in foxes, badgers, martins, raccoons and so forth,[12] although no epidemiologic significance can be ascribed to this observation. Undoubtedly, the porcine reservoir is the basis for the organism found in rats, swine and human beings. Infested meat scraps fed to pigs in the form of garbage are undoubtedly the chief sources of porcine and rodent infestation.[13] Unusual sources, such as that traced to bear meat by Westphal,[14] play a relatively small part.

SYMPTOMATOLOGY

During the course of the life cycle of *T. spiralis* in human beings, certain signs and symptoms become manifest with each phase of larval development. Ordinarily, cases of great clinical severity can be attributed to an initial ingestion of large numbers of trichinella cysts with their subsequent development.[15] The first symptoms are generally gastrointestinal, consisting of nausea, vomiting, abdominal pain and diarrhea. Recurrent infections may result in immunity to the adult worms and in their elimination from the intestinal tract by active diarrhea shortly after ingestion, as the investigations of McCoy[16, 17] and Roth[18] demonstrated in experimental studies on rats and guinea pigs. Gastrointestinal symptoms last three to five days and are followed by a period of muscular aching, pain and tenderness, chills, a temperature up to 105° F., cough, edema of the eyelids and skin rash. Not infrequently, signs and symptoms of pulmonary,[19] cardiac[20–23] and central-nervous-system[24–28] involvement are found. Undoubtedly, Augustine's[12] observations that the inflammatory exudate surrounding the larvae reaching the brain, heart and pancreas destroys the parasites explains why such involvement is only transient. A similar action, he believes, accounts for the inability of the trichinae to pass across the placenta and involve the fetus in utero.

The period of peripheral symptomatology lasts as long as the adult worm is producing eggs — five to seven weeks. Death of patients affected occurs most frequently from the third to the sixth week. Although recovery is usually complete, vague rheumatic pains may persist for about a year.[15]

LABORATORY FINDINGS

The most frequent laboratory aid is the eosinophil count. Trichinosis almost invariably causes a relative and absolute eosinophilia. This fact, which has long been recognized as one of the most reliable signs of trichinosis,[29–32] is not in itself diagnostic but merely presumptive, other laboratory tests being necessary for absolute diagnosis.

The precipitin test, which is usually done by the National Institute of Health at Bethesda, Maryland, is highly sensitive. Unfortunately, it has several drawbacks. Early in the illness it may be negative, three or four weeks often being required before the precipitin titer is elevated. Repeated tests, however, showing a rising titer during the illness as well as the convalescence, are diagnostic.[33] This high titer may persist for years, thus obscuring the diagnosis of some other unrelated illness.[13]

The skin test is of value if there is first an initial negative response to intradermal injection of the antigen, followed at a later date by a positive reaction, or if a delayed positive reaction is followed by an immediate positive one.[34] Immediate positive skin tests may represent an infection with *T. spiralis* as long as three years previously.[35]

Muscle biopsy, if positive, makes diagnosis certain, but is often objectionable to the patient, takes time and frequently yields negative results.

Dammin[33] suggests utilizing the technic of Herrick and Janeway[36] for the demonstration of larvae in the arterial blood. Although this procedure seems to offer a positive diagnostic aid, other references to its use have not appeared in the recent literature.[37]

CASES IN MASSACHUSETTS

A review of the 287 reported cases of trichinosis in Massachusetts reveals 70 in which sufficient information was available to the Department of Public Health for evaluation of epidemiologic, clinical and laboratory data. Of these, 39 (approximately 55

per cent) involved groups of 2 to 8 people in a total of thirteen separate outbreaks. Pork ingestion was readily traceable in all but 4 cases, the majority of patients admitting frequent exposure to pork meat. In 11 cases there were notations that the pork had been eaten raw — usually because the woman of the household had sampled pork-sausage meat to ascertain its spiciness. Members of the same households who had eaten the cooked product suffered no ill effects. This may possibly account for the fact that 47 of the 70 cases, or 67 per cent, occurred in women. The ages ranged from five to eighty-eight years.

The incubation period was difficult to ascertain in most cases owing to the frequency of pork ingestion. In retrospect, however, 26 cases showed nausea, vomiting, diarrhea and abdominal cramps early in the illness, and a history of pork ingestion within three to five days could be obtained. Most cases, however, showed only symptoms referable to the stage of larval dissemination. There was also difficulty in determining the time lapse, but in 9 cases it was believed with relative certainty that such symptomatology occurred from ten to fourteen days after the ingestion of pork. These figures agree with what may reasonably be anticipated from a knowledge of the life cycle of the trichinae.

During the dissemination stage, the peripheral signs and symptoms were recognized (Table 2).

TABLE 2. *Clinical Signs and Symptoms in Disseminative Stage of Trichinosis.*

Sign or Symptom	No. of Cases
Temperature elevation*	67
Malaise	52
Edema of eyelids	47
Conjunctival involvement	10
Facial edema	19
Muscle pains	
Generalized	27
In legs	15
In upper extremities	5
In neck	7
In back	4

*Includes temperatures of 99 to 105°F., with an average of 101.8°F.

Edema of the eyelids was a predominant feature in 47 cases, or 67 per cent. Conjunctival involvement included either edema or hemorrhage into the conjunctiva, or was recorded as "conjunctivitis." Only 1 case occurred in which concomitant edema of the eyelids did not exist. Facial edema was prominent in 19 cases, but in only 2 was edema of the eyelids absent. Muscle pains were relatively prevalent, being prominent in a total of 51 cases (71 per cent). Generalized muscular pains were prominent in 27 cases, or 39 per cent. The legs were specifically mentioned in 15 cases, with frequent notations specifying the gastrocnemius muscles or calves in contradistinction to the upper extremities, in which the arms and shoulders were both mentioned as the sites of discomfort.

Less frequent findings were those indicating pulmonary involvement, chest consolidation being reported in 1 case, chest pains in 4 and cough in 3. Cervical adenitis was mentioned once, as was splenomegaly. Abdominal distention and edema of the extremities were each described twice. Blurring of vision, profuse perspiration and skin rash were described in 4 cases, the last being generalized in 2 and confined to the chest in 1 and to the lower extremities in 1.

Laboratory examinations included white-cell counts, differential counts for eosinophils, precipitin tests, skin tests and muscle biopsies. White-cell counts were reported from 5000 to 26,000, with an overall average of 14,500 and individual cases showing fluctuations from 5000 to 19,000. Eosinophilia was characterized as "elevated" in 16 cases, whereas in the remainder the eosinophil count was specifically recorded in figures ranging from 6 to 85 per cent; individual cases showed fluctuations of as much as 55 per cent on repeated counts. The count was 32.5 per cent as an overall average and was 10 per cent or less in only 5 cases.

Precipitin tests were reported in a total of 16 cases, of which 13 were positive. Skin tests were done in 15 cases, with positive readings in 9. Most of the negative readings, however, were single tests, all done within four or five days of the onset of the symptoms. Undoubtedly, repeated tests would have resulted in a greater number of positive readings.

Muscle biopsy, which was made in 7 cases, was reported negative in 3, positive in 3 and as showing "interstitial myositis" in 1.

The establishment of the diagnosis of trichinosis is ordinarily done in the stage of larval dissemination. Fever, malaise, muscular pain and edema of the orbital region are the most frequent and significant findings. Eosinophilia, often of a high degree, points to the diagnosis. Precipitin and skin tests, together with muscle biopsy, offer a positive diagnosis but are subject to certain limitations and interpretations.

A definite diagnosis is rarely made in the early stages. Reported earlier diagnoses in the 70 cases described above had included "grippe," acute nephritis, chronic rheumatic fever, pyelonephritis, gastroenteritis, staphylococcal infection, food poisoning and poliomyelitis. Pepper[38] mentions typhoid fever, angioneurotic edema, meningitis, tetanus and acute sinusitis as being possibilities in differential diagnosis.

Prevention

Since the therapy of trichinosis has not been highly satisfactory,[37] the main interest revolves about the prevention of the disease. Inspection of meat by federal agents does not mean that any meat or meat product can be guaranteed to be free of trichinae. Because of the technical difficulties involved, meat cannot be investigated for *T. spiralis*

routinely or completely. Microscopic examination of pork is highly unreliable and is not utilized as a routine measure. It must also be realized that only 60 per cent of the hogs slaughtered in this country are federally inspected.[39] Attempts have been made by various state legislatures to compel hog breeders feeding garbage to hogs to steam cook all such material. Although this procedure undeniably destroys parasites present in pork scraps,[40] the time and expense involved do not make this practice popular. In Canada, however, where such cooking is governed by statute, the reported number of cases per 100,000 population is one twelfth that in the United States. Gould[41] suggests a newer method of control that may eventually prove more acceptable. Freezing of pork at a temperature of 5°F. for twenty days in sections 15 cm. or less in thickness destroys trichinae. Raw pork kept at 0°F. for seventy-two hours is rendered free of living parasites, and ground pork preserved at the same temperature is freed of *T. spiralis* in a few minutes. If this method is generally adopted and all pork refrigerated at the required temperatures, it is entirely conceivable that a generalized decrease in trichinosis can be anticipated. The growing popularity of deep-freeze cabinets in the home may be expected to contribute to this end.

Ultimately, however, the control of trichinosis is the responsibility of the consumer. Uncooked pork, regardless of the source and regardless of whether it has been inspected by federal, state or city authorities, must be considered unsafe unless properly cooked. Undoubtedly, much of this type of pork is perfectly safe, but the added factor of proper cooking is of sufficient value to be advised routinely. Ordinarily, the main sources of difficulty are not in eating the various pork products raw but in cooking them to an insufficient degree. Cooking must remove all traces of pink color from the meat and leave it a dull white. Then, and only then, can pork be considered noninfectious for *T. spiralis*.

Summary

Of 287 cases of trichinosis reported in Massachusetts from 1936 to 1945, a total of 70 are reviewed for epidemiologic, clinical and laboratory data of significance and compared with the accepted clinical picture of the disease.

The clinical findings most frequently noted were fever, malaise, orbital edema and muscle pains. Eosinophilia was the most constant laboratory finding but must not be considered diagnostic in itself.

The control of trichinosis, in the final analysis, can be guaranteed only by the complete cooking of all pork and pork products. New deep-freezing methods may soon be expected to aid in the lowering of infectivity of pork.

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TROPICAL DISEASES IN VETERANS OF WORLD WAR II*

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SINCE the cessation of hostilities, some ten million soldiers, sailors and marines have returned from overseas and resumed civilian life. Because a significant percentage served in areas notorious for the prevalence of tropical and exotic diseases, a serious concern quite justifiably exists regarding the possible effects on civilian public health and on civilian medical practice in general.

Butler and Sapero,[1] in 1945, analyzed the possibilities of new tropical diseases being introduced into the United States and stated that, during the two-year period 1943–1944, many thousands of servicemen who had acquired tropical diseases overseas had already returned and that no new foci of tropical disease had appeared in civilian communities in this country as a result. In spite of the great influx of patients suffering from recurrent malaria, the opinion was expressed that it was unlikely that carriers of this disease would cause a significant increase in the total incidence of malaria in the United States or that there would be an appreciable occurrence of malaria in areas previously free of the disease. The fact was emphasized, however, that the South Pacific strain of vivax malaria was more virulent and seriously disabling than any prevalent in this country. Concern was expressed that if this strain became established in the United States, it would greatly aggravate the malaria problem.

None of the other tropical diseases seemed to present any discernible hazard. Viewing the problem broadly, it was concluded that there appeared little cause for alarm regarding postwar morbidity from tropical diseases newly introduced into civilian communities.

It is now possible to review the estimate of the situation as it appeared in November, 1944, in the light of further experience. Since that time, several million members of the armed forces have returned to civilian life, and specific data on tropical diseases acquired by the armed forces during the entire war period have become available. Although the conclusions derived from the earlier analysis remain substantially the same, a clearer definition of the effects that tropical diseases may exert on postwar civilian life is now possible.

DISEASES OF MAJOR OCCURRENCE

Dysentery and diarrhea, malaria, infectious hepatitis and dengue, in respective order of frequency, constituted the tropical diseases of major occurrence in some 11,300,000 persons who served overseas from 1942 to 1945, inclusive (Table 1). As in almost every war in the past, the dysenteries, which occurred in approximately 6700 out of each 100,000 men, headed the list of the tropical diseases in World War II. Malaria, as might have been guessed, ranked second in frequency, with a rate of 5100 per 100,000. A surprising finding, however, was the occurrence of infectious hepatitis as the third disease on the list, with an approximate rate of 1700 per 100,000. The fourth disease — dengue — had a rate of 1100 per 100,000.

TABLE 1. *Tropical Diseases in the Armed Forces, 1942–1945.*

DISEASE	ARMY	NAVY	TOTAL	APPROXIMATE RATE PER 100,000
Dysentery and diarrhea	523,449	233,400*	756,849	6700
Malaria	462,060	110,890	572,950	5100
Infectious hepatitis	172,000	19,574	191,574	1700
Dengue	84,100	37,508	121,608	1100
Hookworm	13,000*	6,943	19,943	180
Filariasis (Bancroft)	2,150	11,859	14,000	120
Sandfly fever	12,400	234	12,634	110
Typhus, scrub	6,861*	560	7,421	86
Dysentery, amebic	3,051*	1,453	4,504	40
Schistosomiasis	1,636	36	1,672	15
Typhus, endemic	491*	402	893	8
Leishmaniasis	346	15	361	3.00
Relapsing fever	220	19	239	2.00
Smallpox	116	9	125	1.00
Typhus, epidemic	61*	2*	63	.60
Cholera	14	0	14	.10
Trypanosomiasis	2	3	5	.04
Plague	0	0	0	0
Yellow fever	0	0	0	0
Leprosy	0	0	0	0

*Estimated — all other data derived from official sources and still in process of compilation and editing.

Dengue

In evaluating the four diseases of most frequent occurrence in the light of their potential postwar effect on civilian life, it can be said that dengue at least presents no problem. There has been no case in which this disease, once widely prevalent in the United States, has been reintroduced; nor are there chronic sequelae that will require medical care during the postwar period.

Malaria

The status of malaria is more difficult to evaluate. It may be said, however, that the vast majority of malarial infections contracted during the war have run their course. Military hospitals, overcrowded in 1943 with cases of malaria, now are treating only an occasional patient for the disease. Fortunately, the syndrome of so-called "malaria cachexia" has occurred rarely, if at all, even in the more persistent

*Presented at the annual meeting of the Massachusetts Medical Society, Boston, May 22, 1946.

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infections. Another point of practical postwar importance to physicians is that such cases of recurrent malaria as may be encountered will almost without exception be those of the benign tertian type. Quartan malaria, a disease that is apt to persist for many years, has been acquired only by an exceedingly small number of service personnel. Infections of malignant tertian malaria, although not of infrequent occurrence overseas, are of short duration, readily respond to treatment and, unlike benign tertian infections, do not tend to recur. As a result, malignant tertian infections have not been encountered in servicemen returning from overseas, except in the few who have come directly to this country after recent exposure in a malarious area.

In spite of previously expressed concern regarding the introduction of a new strain of malaria, no evidence has been forthcoming that the more seriously disabling South Pacific strain of *Plasmodium vivax* has become established in this country. It is not possible, however, to be at all certain on this point, since considerable time will elapse before its establishment is apt to be recognized. If establishment occurs, not only will cases infected with this exotic strain have a severer clinical course but also the relapses will be more frequent than those of the indigenous strain of benign tertian malaria. Of even greater import, the American Negro, although relatively refractory to the *P. vivax* strain in the United States, appears as susceptible as nonimmune Whites to the South Pacific strain. This means that the Negro population of the South may suffer serious consequences if the South Pacific strain becomes established in this country.

So far as it is known, there is only one report of a case in which malaria transmission appeared in the United States in an area previously free of the disease. In 1945 Osgood[3] described 2 primary cases of malaria in civilians in Oregon in an area where anophelines capable of transmitting the disease were found, and where a returned soldier was identified as a carrier and the probable source of the disease.

Although malaria in men returning from overseas is becoming relatively rare, and the peak of opportunity for introduction into new areas thus appears to have passed, it is of interest to note that Watson[3] recently demonstrated that *Anopheles quadrimaculatus*, the important vector of malaria in the United States, is capable of transmitting the South Pacific strain of *P. vivax* malaria. Thus, a distinct hazard still exists and warrants maximal measures of anopheline control.

Bacillary Dysentery

Fortunately the vast majority of cases of bacillary dysentery and diarrhea encountered in the armed forces have been mild and of short duration. That chronic disabilities from dysentery are not likely to present a major postwar problem is evident in the small number of patients with chronic dysentery now under treatment in military hospitals. Special epidemiologic reports on Navy personnel indicate that few persistent carriers have resulted from wartime-acquired dysentery. Although this suggests that overseas veterans as a group will probably not present a particularly dangerous carrier problem, careful public-health scrutiny will be required to ascertain whether such a view proves to be true in practice.

Infectious Hepatitis

Of the four most frequent diseases, infectious hepatitis appears by far the likeliest to lead to significant postwar repercussions.

The total figure for the armed forces includes hepatitis transmitted in two distinct ways. One method of transmission resulted in epidemic outbreaks usually associated with a widespread prevalence of dysentery. The mechanism of transmission in these outbreaks, although not definitely established, is assumed to be similar to that in dysentery transmission. In addition, the figures include an indeterminate but significant number of cases of so-called "homologous serum jaundice." These cases followed the therapeutic use of blood or blood products unknowingly obtained from donors harboring the hepatitis virus. For example, of the total of 172,000 cases in the Army, a large number were jaundice infections that resulted from the program of yellow-fever vaccination, in which certain lots of vaccine, to which human serum had been added, were contaminated with the jaundice-producing virus. Other cases followed the use of whole blood or plasma obtained from donors who were probably experiencing unrecognized subclinical attacks. The injection of pooled lots of convalescent serum into a series of patients is especially hazardous. In this procedure, the chance of including a donor who may be carrying the virus is increased, and since there are multiple recipients, a large number of cases of hepatitis may follow.

The essential postwar danger to the civilian population is that the high wartime prevalence of hepatitis in the armed forces may lead to an increasing civilian prevalence by passage of the icterogenic virus in the therapeutic use of blood. Fortunately, there is already keen appreciation of this problem, and active research is underway to set up necessary safeguards. Until safe methods can be devised, physicians must recognize and evaluate the danger involved and weigh this danger in the individual case against the prospective therapeutic advantage.

Another point of practical significance in the large-scale occurrence of hepatitis in the armed forces is the fact that at least a small percentage of patients may develop cirrhosis. In the medical care of veterans, a careful history to determine if a patient has

had jaundice should be taken, and when the history is positive, special studies to reveal either latent or overt hepatic dysfunction should be made.

Diseases of Lesser but Significant Occurrence

Whereas Table 1 lists in the first group four diseases whose numerical occurrence was in the hundred thousands, the second group involved at the most less than one tenth as many patients.

The reported occurrence of 20,000 cases of hookworm undoubtedly represents a small fraction of the actual number of patients who acquired this infection. Prewar Army and Navy surveys indicated an incidence of *Necator americanus* infections in from 5 to 10 per cent of recruits from the South. Postwar surveys of personnel who have served overseas show by comparison that a significant number of new infections have been acquired in endemic areas overseas. Fortunately, infections sufficiently heavy to cause serious clinical manifestations have not occurred frequently. In most of the hookworm-positive cases the infection is light, and the worms are lost spontaneously.

Whereas the over-all problem from a clinical standpoint appears of little importance, the fact that many of these men have acquired infections with *Ancylostoma duodenale* is a matter of some concern. *A. duodenale* is not at present found in the endemic hookworm areas of the United States. Thus, there is a possibility that returning servicemen, in unsanitated areas, will cause the introduction of this species, which is considered more pathogenic than *N. americanus*.

Careful studies by both the Army and the Navy now permit the statement that few, if any, permanent disabilities will result from filariasis. Furthermore, repeated blood studies have shown the occurrence of microfilaria to be exceedingly rare. Since transmission is dependent on their presence in the blood stream, this suggests that filariasis is unlikely to become established in the United States.

Neither endemic nor scrub typhus appears likely to present a postwar problem. Of the total of 893 cases of endemic typhus, practically all were actually acquired in the United States; this is in contrast to almost all the other diseases, in which the vast majority of cases were acquired overseas. Regarding cases of scrub typhus, most of which were acquired in the Southwest Pacific or in the China or India-Burma Theater, the absence of a suitable vector in the United States and of acute cases as sources of infection renders postwar dissemination improbable. For the same reason sandfly fever can likewise be said to have no particular postwar importance. It is believed that as a result of careful search among exposed groups practically all cases of schistosomiasis have been diagnosed and given intensive curative treatment.

The most serious disease in this group in all probability is amebic dysentery. It can be said with certainty that the actual number of infections far exceeds those reported. The problem is not one of introduction or dissemination, for it is well known that the causative organism, *Endamoeba histolytica*, is already prevalent in 10 per cent of the population of the United States. The difficulties are clinical, being due to latency, chronicity and, most of all, the frequently obscure symptoms that mitigate the chances of recognition of amebic infections.

Diseases Rarely Encountered

In contrast to the first two groups of diseases, the third group in Table 1 has been compiled principally to show certain tropical diseases that, although they might have been expected to occur fairly often, were actually acquired rarely or not at all.

Of great interest is the fact that the wartime prevalence of the five quarantinable diseases — smallpox, cholera, plague, epidemic typhus and yellow fever — was insignificant when one realizes the large numbers of men and women operating in areas in which an appreciable hazard of acquiring these diseases existed.

Of importance, however, is the occurrence of 125 cases of smallpox. In every case in which full information was available, it was found that the fault lay in failure to obtain successful vaccination. There has not been a single case that would lead to suspicion that American-produced vaccine failed to protect even against the extremely virulent Oriental strains of smallpox.

Despite the relative rarity with which smallpox occurred, this disease has led to outbreaks in civilian communities as a result of introduction by members of the armed forces. Two localized epidemics have been reported. In San Francisco, 6 cases that appeared in civilians were assumed to be traceable to a case in a soldier who arrived in the acute stage of the disease from overseas by airplane. More serious is the recent epidemic in Seattle, in which up to the present, there have been some 59 cases, with 16 deaths, originally traceable to a soldier who arrived by surface vessel.

Even prior to the introduction of smallpox into these two civilian communities, its first occurrence in servicemen overseas was followed by an intensive program of revaccination of all exposed personnel in both the Army and Navy. Tightening of aircraft and ship quarantine, as a further safeguard, was instituted. Quarantine officers of the United States Public Health Service, working in close collaboration with quarantine officers of the armed forces, are maintaining close surveillance of all men returning from overseas to prevent, so far as possible, any further epidemics of quarantinable disease, such as those in San Francisco and Seattle.

The epidemics of smallpox on the West Coast forecast a potential hazard of considerable future public-health significance. Civilian air travel from

the Orient and other endemic areas may be expected to occur in the future on an ever-increasing scale. Although vaccination will be required in international travel, improperly vaccinated persons may arrive while in the incubation period of the disease and may travel far inland before recognizable symptoms occur. The only foolproof countermeasure is for civilian communities to maintain a high level of group immunity by sustained and comprehensive vaccination programs.

Summary

Data regarding the occurrence of tropical diseases in the armed forces during the wartime period of 1942 to 1945 inclusive are presented. Of the diseases usually termed "tropical," those of a major occurrence in men who served overseas, in order of frequency, were dysentery, malaria, infectious hepatitis and dengue. The incidence of all other tropical diseases contracted during this period was remarkably small considering what had been anticipated in view of overseas exposure in highly endemic areas.

The points of greatest postwar significance to civilian public-health and medical practice in general appear to be the following.

There is small likelihood, despite the high wartime prevalence of dysentery, that chronic disability will occur in any large number of veterans or that there will be a significant spread of bacillary infections in civilian communities.

The end of the once serious problem of malaria appears to be in sight. The vast majority of recurring malarial infections have expended themselves. Although significant spread of the disease in civilian communities appears not to have occurred to date, the improved situation still does not warrant a relaxation of control efforts.

The large-scale occurrence of infectious hepatitis during wartime may result in postwar problems of continuing gravity. The essential danger is dissemination incident to the therapeutic use of blood and blood derivatives.

Intensive measures have been undertaken by the armed forces to prevent the further occurrence of smallpox epidemics such as have already appeared in two civilian communities. Modern rapid civilian air travel presents a future danger of smallpox introduction against which the surest countermeasure for civilian communities is comprehensive smallpox vaccination.

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NOTES ON THE TREATMENT OF TETANUS

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BOSTON AND PHILADELPHIA

PROPHYLAXIS against tetanus by means of active immunization with tetanus toxoid reduced the incidence of this disease among wounded United States Army personnel to a low figure. Only 1 case of tetanus had been reported in the European Theater by February 1, 1945. In the German Army, however, active immunization by means of toxoid was given only to those who stood the greatest chance of being wounded far from their own lines, such as members of the *Luftwaffe* and paratroops. The great mass of the German Army received no active immunization and had to depend for protection on the passive immunity supplied by tetanus antitoxin administered at the time of wounding. As a result, tetanus was frequently encountered in German prisoner casualties treated in United States military hospitals. Since the rarity of the disease among American soldiers has denied many American physicians the opportunity of dealing personally with its many problems, it seems worthwhile to present our experience gained in the care of 10 cases of tetanus that developed among the 3507 sick and wounded German prisoners treated at an overseas station hospital between September, 1944, and March, 1945. A summary of the clinical course of each of these patients is presented in Table 1. Some of the important points regarding the clinical problems and therapeutic management are discussed below.

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Incubation Period

The incubation periods ranged from five to twenty-two days, with an average of slightly over ten days. Although in this series no correlation could be made between the length of the incubation period and the mortality, because of the variable factor of antitoxin administration before the onset of the disease, it is interesting that all the deaths occurred with incubation periods of ten days or less. It should be noted, however, that 3 of the 6 survivors had short incubation periods — ten, eight and five days, respectively.

TABLE 1. *Data in 10 Cases of Tetanus among German Prisoners.*

Case No.	Injury	Incubation Period	Specific Prophylaxis	Operative Treatment	Antitoxin Therapy		Chemotherapy after Diagnosis	Transfusion	Complications	Result
					Intravenous	Intramuscular				
		days			*A. units*	*A. units*				
1	Gunshot wound of right thigh and compound fracture of femur	6	None recorded	Redébridement	40,000	30,000	None recorded	500 cc. of blood	None recorded	Death 24 hours after beginning of treatment
2	Penetrating wound of hand and compound fracture of metacarpal	8	1500 units of antitoxin 5 days after injury	Amputation of left hand above wrist	20,000	50,000	None recorded	None recorded	High temperature and severe spasms	Death
3	Severe burns of face, hands, thigh and knee	10	0.5 cc. of toxoid 1 day after injury	None	20,000	60,000	1 gm. of sulfadiazine every 4 hours and 20,000 units of penicillin every 3 hours	None recorded	Pulmonary atelectasis, pulmonary edema, pleural effusion and anemia (red-cell count of 1,500,000)	Death on third day of treatment
4	Gunshot wound of right forearm, compound fracture of right ulna, penetrating wound of chest and laceration of scalp	14	1500 units of antitoxin 8 days after injury	Amputation of right arm above elbow	40,000	100,000	23 gm. of sulfadiazine and 1,000,000 units of penicillin	750 cc. of plasma and 2000 cc. of blood	Atelectasis of right lung, fecal impaction and oliguria	Recovery
5*	Compound fracture of metacarpal and six other penetrating and lacerating wounds	22	1500 units of antitoxin on day of injury	Redébridement of all wounds	30,000	140,000	640,000 units of penicillin	1500 cc. of blood	Local tetanus near one wound in leg, mild pulmonary atelectasis and serum sickness	Recovery
6	Compound fracture of left tibia	5	1 cc. of toxoid on day of injury and 3000 units of antitoxin 4 days after injury	Amputation of left lower leg	30,000	110,000	44 gm. of sulfadiazine and 1,000,000 units of penicillin	500 cc. of plasma and 4000 cc. of blood	Severe atelectasis of both lungs, with pneumonia, laryngospasm, alkalotic tetany(?) and oliguria	Recovery
7	Lacerating wound of right thigh, with foreign body	11	0.5 cc. of toxoid on day of injury and 1500 units of antitoxin 9 days after injury	Redébridement		120,000	34 gm. of sulfadiazine and 640,000 units of penicillin	None recorded	Oliguria, spasms of bladder sphincters and mild pulmonary atelectasis	Recovery
8†	Multiple lacerating wound of left buttock, thigh and right leg and compound fractures of toes of left foot	10	1500 units of antitoxin 6 days after injury	Redébridement	10,000	110,000	12 gm. of sulfadiazine and 1,120,000 units of penicillin	1500 cc. of blood	None recorded	Recovery
9	Severe burns of face, arms and neck	8	750 units of antitoxin 5 days after injury	Redébridement and removal of powder particles	40,000	110,000	40.5 gm. of sulfadiazine and 1,280,000 units of penicillin	500 cc. of plasma and 5300 cc. of blood	Bleeding from débrided areas	Recovery
10	Compound fracture of tibia and fibula and two penetrating wounds of left thigh, with foreign body	10	1500 units of antitoxin 1 day after injury	Redébridement		180,000	45 gm. of sulfadiazine and 980,000 units of penicillin	500 cc. of plasma and 2000 cc. of blood	Abdominal distention, bladder-sphincter spasms, pulmonary atelectasis, severe (? tetanus) spasm resulting in death and extensive pulmonary atelectasis, with intrapulmonary hemorrhages found at autopsy	Death on seventh day of treatment

*This patient had generalized tetanus, with especially severe local tetanus in one leg.

†Symptoms began as local tetanus in one leg, for 4 or 5 days, and muscle spasm finally spread to whole body.

Mortality

Of the 10 patients treated, 4 died. The first 3 patients died within three or four days of the onset of symptoms; the other patient died suddenly on the seventh day of treatment, at a time when he appeared to be recovering. Other factors besides the length of the incubation period undoubtedly played a role in the successful outcome of those who recovered. Chief among these, in our opinion, was the factor of increased experience in handling the problem gained during treatment of the first 3 fatal cases. Another factor may well have been the larger amounts of antitoxin given to those who recovered.

Prophylaxis

Data covering the time, type and amount of specific prophylaxis were available in 9 of the 10 cases. In none of these had the prophylaxis been satisfactory. The rules governing proper prophylaxis are as follows: a person who has already been actively immunized by tetanus toxoid should receive a booster dose of 1 cc. at the time of injury — it is useless to give a so-called "wound dose" of toxoid to a person who has not been previously actively immunized, because the development of antibodies from the first dose is too little and too late to prevent the occurrence of the disease; a patient who has not been actively immunized must be given passive immunity by means of tetanus antitoxin at the time of injury. Experience in World War I demonstrated that the amount of antitoxin should be 1500 (American) units and that it should be given, if possible, on the day of the wound and repeated at weekly intervals for a total of three doses. The passive immunity created by the administration of one dose of 1500 units of antitoxin is protective for only seven to fourteen days, and unless this dose is repeated, as recommended above, tetanus develops in a certain number of cases. In the patients studied by us, the following deviations from these recommended procedures were noted: in Case 2 a dose of 1500 units of antitoxin was given, but not until the fifth day after injury, and tetanus developed on the eighth day; in Case 3, instead of antitoxin, 0.5 cc. of toxoid was given on the day after the wound was received, and tetanus developed on the tenth day; in Case 4 a total of 1500 units of antitoxin was given, but not until the eighth day after wounding, and tetanus developed on the fourteenth day; in Case 5 a dose of 1500 units of antitoxin given on the first day was not repeated, and tetanus developed on the twenty-second day; in Case 6, instead of antitoxin, 1 cc. of toxoid was given on the day of injury, and tetanus developed on the fifth day in spite of 3000 units of antitoxin finally given on the fourth day; in Case 7, instead of antitoxin, 1 cc. of toxoid was given on the day of the wound, and tetanus developed on the eleventh day in spite of 1500 units of antitoxin finally given on the ninth day; in Case 8 a dose of 1500 units of antitoxin was given, but not until the sixth day, and tetanus developed on the tenth day; in Case 9 only 750 units of antitoxin were given, — on the fifth day, — and tetanus developed on the eighth day; in Case 10 a dose of 1500 units of antitoxin was given on the second day but was not repeated, and tetanus developed on the tenth day.

Failures to give proper specific prophylaxis to these patients were undoubtedly due to battlefield conditions. They nevertheless serve to illustrate the value of administering antitoxin to unimmunized personnel early, in proper amounts and with repeated doses.

Nine of the 10 patients had received considerable amounts of both penicillin and sulfadiazine for wound infection prior to the development of tetanus. One patient had received as much as 1,000,000 units of penicillin and 30 gm. of sulfadiazine, and another had received 400,000 units of penicillin and 40 gm. of sulfadiazine. These facts offer suggestive evidence that modern chemotherapeutic agents cannot be relied on — at least in the amounts mentioned — to prevent the development of the disease.

Type of Wound

Seven patients had compound fractures, 2 had penetrating flesh wounds, and 2 had severe burns. The following points need emphasis: the eschar of a contaminated burn creates ideal anaerobic conditions for the development of *Clostridium tetani*, and a small penetrating wound harboring pieces of dirt and clothing may prove more fertile soil for the organism than the larger and more dramatic wound that, in the normal course of events, attracts greater attention from the surgeon.

Diagnosis

The most important step in the diagnosis of tetanus is to think of it. Even after a case has occurred in a hospital and the staff has become alerted, the signs and symptoms are apt to be missed for twenty-four hours. Suspicion is often aroused by a nurse or ward attendant who calls the medical officer's attention to the fact that a patient is having difficulty in eating or in placing a thermometer into his mouth.

The speed with which tetanus develops from onset to clearcut symptomatology varies greatly from patient to patient. When the disease is fulminant, signs may be observed within a few hours of onset. Conversely, mild local tetanus may smolder along as local muscle spasm in the vicinity of a wound for several days before the appearance of spasm in other muscles makes the diagnosis unequivocal.

The so-called "lockjaw phenomenon" is usually the first overt sign and symptom of classic generalized tetanus. When a wounded man complains that he is having difficulty in opening his mouth,

the differential diagnoses to be considered include mumps, peritonsillar abscess, affections of the temporomandibular joint, trismus following tooth extraction, a wound involving the mouth and jaws directly, and tetanus. The presence of the first five of these conditions may be readily determined. In their absence tetanus must be considered the diagnosis. In addition to lockjaw, the patient will probably show tenseness of the face muscles producing the risus sardonicus, as well as increased tonus of the sternocleidomastoid muscles, which makes them easily palpable even when the patient's head is lying relaxed on his pillow. Continuous spasm and rigidity of the abdominal muscles may already have developed or may soon follow. Usually accompanying these signs are fever, profuse sweating, extreme mental apprehension and beginning difficulties in swallowing and expectorating. The muscle spasm and rigidity gradually spread over the whole body, opisthotonos develops and the patient becomes "as stiff as a wooden Indian." Sudden, severe local spasms or generalized convulsions, superimposed on the continuous muscle rigidity, are caused by such external stimuli as noise, changing the bed or dressing the wound.

The onset of tetanus beginning with local symptoms is characterized by increasing irritability of the muscles in one part of the body — usually in the vicinity of a wound — that develops several days after injury. At first, the patient may complain only of painful intermittent cramps in the involved region. Within a day or so the cramps become more and more frequent and are brought on by weak stimuli, such as merely touching the bedclothes or exposing the patient to a cold draught. Gradually, the whole group of muscles in the neighborhood of the wound shows continuous spasm. These muscles are tense and firm at all times, and merely touching them produces a severe spasm of the whole extremity and possibly of the contralateral extremity as well. Following this, generalized tetanus often develops. It is necessary and difficult to differentiate this form of tetanus from local muscle spasm resulting from direct injury to muscle or nerve. In general, spasm resulting from direct injury may be expected to decrease a few days after the wound, whereas that from tetanus usually begins only after the first few days have passed. In doubtful cases the condition should be treated as if it were tetanus.

The initial symptom in one patient (Case 8) was local spasm in one leg that was not diagnosed for four days. Even after treatment was started, signs of generalized tetanus of a mild sort developed. One patient with generalized tetanus (Case 5), who had had six major wounds débrided at the onset of symptoms, showed maximum muscular spasm in the vicinity of a seventh wound, which had not been débrided because of its apparent insignificance. Because of the persistence of this local irritability, débridement was subsequently performed, and a dirty piece of uniform was removed from this small but deep wound.

Bacteriology

Little help in the practical management of a case of tetanus can be obtained from culture of the wounds for *Cl. tetani*. In many war wounds, bacilli are found that resemble *Cl. tetani* morphologically but are nonpathogenic organisms. Furthermore, proved *Cl. tetani* can be cultured from about 20 per cent of all war wounds in the absence of clinical tetanus. The isolation and identification of the organism take too long to be of help in early diagnosis.

Treatment

Before the treatment of a case of tetanus is begun, it is well for the physician to have a clear conception of the magnitude, complexity and duration of the problem confronting him. The patient will usually have an operation under anesthesia for redébridement of his wound. He will be seriously ill for ten days or two weeks and almost completely helpless. In addition to the pain, spasms, muscular rigidity and mental apprehension produced by tetanus, the patient usually suffers from a serious wound, which in itself requires expert surgical or orthopedic attention and which may already have disturbed the bodily economy by means of infection and loss of protein, hemoglobin and electrolytes. As a result, the fluid, electrolyte, caloric and protein requirements are excessive, and yet the patient cannot eat and drink in the ordinary way. He may be incontinent of urine and feces. He is subject to all the allergic reactions consequent to the administration of antitoxin, as well as to dangerous complications at every turn that may demand immediate intervention. In view of these facts, adequate preparation must be made from the beginning to meet successfully the difficulties ahead.

In the first place, special attendants must be selected to care for this patient, and this patient alone, day and night. They should be the most reliable, observant and steady personnel available. Secondly, a suitable place, apart from other patients and visitors, should be selected. It is best to have one room for the patient and another for the attendant. These rooms should be equipped with all the materials necessary for the care of the patient, so that they form a unit in which the personnel may function free from the delays of ordinary hospital procedure.

Having arranged for suitable personnel and a properly equipped place for the care of the patient, the physician should outline a definite schedule of treatment on an hourly timetable. Many treatments, medications, dressings and procedures of one sort or another should be scheduled in groups

so that several things are done at once and time is allowed for the patient to have uninterrupted rest for the succeeding interval. A three-hour schedule proved satisfactory in our hospital. The patient may be given sedation, penicillin, feeding, back massage, postural changes and intravenous therapy, if indicated, at intervals of three hours. After the first 3 cases, we learned that it was well worth while to have a mimeographed form on which there was space for every hour of the day and night for recording the therapy that was ordered and carried out. When these forms had been completed, they were filed chronologically in the attendant's room so that the medical officer could easily refer to them.

The main principles of treatment adopted were as follows: sufficient antitoxin was given to the patient to neutralize the effects of toxin that had been and was still being produced; so far as possible, the focus at which tetanus toxin was still being produced was removed; attempts were made to prevent and treat the complications of the disease; and general supportive treatment was given.

The administration of antitoxin involves a decision regarding the amount of antitoxin to be given and the route and speed of its administration. The factors affecting this decision are the length of the incubation period and the severity and rapidity of progression of the symptoms. Patients who had had a short incubation period and fulminating symptoms were considered to require large amounts of antitoxin, about one quarter of the total dose being given intravenously. In the slowly progressive form, in which mild symptoms developed over two or three days, we gave all antitoxin intramuscularly and in smaller amounts.

In the first 3 cases 70,000 to 80,000 (American) units of antitoxin was given — 20,000 to 40,000 intravenously and the rest intramuscularly. The 3 patients died. These unfortunate results induced us to use between 120,000 and 180,000 units of antitoxin in the subsequent 7 cases; in this group, only 1 patient died. In 5 of these cases fulminating symptoms led us to give 20,000 to 40,000 units intravenously. The remainder was injected partly into the muscles in the vicinity of the wound and partly into the gluteal or thigh muscles. In all cases the great bulk of the antitoxin was administered as soon as possible after the diagnosis of tetanus had been made, usually during the operation for débridement of the wound. In 3 patients further progression of symptoms and a feeling of doubt concerning the elimination of the focus, such as widespread burns, induced us to give additional doses in the course of the ensuing week. Whenever antitoxin was administered, adrenalin in a syringe was available for immediate use.

The usual procedure was to perform a skin test for sensitivity to horse serum as soon as the diagnosis had been established. During the twenty minutes that were necessary for the observation of the reaction to this test, the operating theater was alerted to make ready for débridement of the wound, and the previously selected personnel were summoned to prepare the rooms and equipment for the subsequent care of the patient. The allotted dose of antitoxin was administered during the operation.

Radical débridement of every wound was performed under intravenous Pentothal Sodium anesthesia. This is necessary, in our opinion, despite a history or evidence of previous débridement and despite the innocent appearance of slight wounds. Amputation, in 3 borderline cases, was considered justified, since the immediate threat to life from a residual focus of tetanus outweighed the handicap of a permanent deformity. In a patient with extensive burns it was considered necessary to employ widespread, meticulous surgical removal of necrotic tissue even despite the risk of some secondary hemorrhage. This was followed by activated zinc peroxide dressings, which were changed under anesthesia every two or three days until the areas remained clean. Postoperative wounds were usually dressed with penicillin compresses and in some cases with activated zinc peroxide.

When the patient was wheeled from the operating theater, two major steps in therapy had been accomplished: the focus of tetanus toxin production had been removed so far as was possible and the patient had received a large amount of antitoxin to offset the effects of toxin that had already been produced.

The caloric, protein, electrolyte and fluid requirements of the patient with tetanus are large because of high fever, constant muscle spasm, excessive sweating, infection, and loss of plasma and blood from the wound. To meet these demands, a stomach tube was introduced shortly after the patient's arrival from the operating room. By this route were subsequently given a daily diet of 3000 to 3500 calories containing 120 to 130 gm. of protein and 3500 to 4000 cc. of fluid. The tube proved an invaluable method of giving not only these nutrients but also medications such as sulfonamides, vitamins, sedatives and mineral oil. By the use of a tube of sufficient length, all these procedures could be effected without even waking the patient from sleep. It is difficult to get a tube in place in a patient with tetanus. We found it helpful to carry out this procedure shortly after a sedative had been given, when the patient's apprehension had been dulled and yet before the sedative had taken such effect that the patient was no longer co-operative. Once the tube was in place, our practice was to leave it there five or six days without renewal, since reinsertion often precipitated convulsive seizures.

Evidence at autopsy, in an early and rapidly fatal case, of widespread tissue edema, in addition to pulmonary edema and pleural effusion, attracted our attention to the possibility that low plasma

proteins had been an important cause of death. As a result, studies of plasma protein, hemoglobin and hematocrit values were made, and in many cases these were found to be lowered. To such patients large amounts of plasma and whole blood were given intravenously in an effort to restore these values to normal. One patient received 5300 cc. of blood and 500 cc. of plasma, and several others received 1500 to 2000 cc. of blood.

Our observations led us to believe that these vigorous efforts to meet abnormally great nutritional demands were helpful both in supporting the patient through the critical stage of the disease and in shortening the period of convalescence.

Complications

Convulsions. The prevention and treatment of convulsions involved nice judgment in the use of sedation, and it was soon found that the course to be followed was treacherous. On the one hand, too little sedation left the patient exposed to the dangers of severe spasms and convulsions. In one patient (Case 6) who was too lightly sedated spasm of the larynx with severe stridor relaxed only when the patient appeared on the point of death. Thereafter a tracheotomy set was kept in the treatment room. The last patient of the series (Case 10) appeared to be doing well on the seventh day when a sudden generalized convulsion occurred and the patient became extremely cyanotic and died in spite of all attempts at resuscitation; at autopsy, extensive atelectasis and intrapulmonary hemorrhages were found. On the other hand, it soon became obvious that too much sedation increased the danger of serious pulmonary complications. The patient with tetanus can scarcely expectorate through his clenched teeth and can take only shallow breaths, owing to the rigidity of the chest muscles. These factors alone render the patient easy prey to pulmonary atelectasis. When sedation is added in amounts sufficient to depress respiration and the cough reflex, the susceptibility to pulmonary complications is still further increased.

To avoid these two extremes, it was found advisable to give a regularly scheduled dose of sedative sufficient to blunt the edge of apprehension and keep the patient drowsy a good deal of the time without narcotizing him so deeply that he became difficult to arouse. Temporary increases in this basal dose were made whenever severe spasms threatened and before stimulating procedures, such as dressing the wound and replacing a stomach tube, were carried out. It proved imperative on several occasions also to have immediately available a parenteral sedative of the quick-action type.

Of the many sedatives suggested for use in the treatment of tetanus, we selected two and can report on them as being satisfactory. Paraldehyde met all the requisites: it could be given by mouth or by rectum for prolonged basal sedation; it could be taken directly from the bottle into a syringe for intramuscular or intravenous injection to gain an immediate effect in an emergency; 4 to 6 cc. of paraldehyde every three hours by mouth — or by means of a stomach tube — produced about the desired amount of basal sedation in most cases; and 2 to 4 cc. intravenously or intramuscularly supplied rapid sedation successfully. The other sedative used was sodium amytal, which could be given by mouth in doses of 0.2 gm. every three hours for basal sedation or by vein in doses of 0.3 gm. for emergencies. After three or four days the patient's tolerance to these drugs usually showed a definite increase and the dosage was raised or a shift to the alternate sedative effected.

Since the aim is to give as little sedation as is consistent with protection from convulsive seizures, it is essential that the greatest advantage be taken of the sedation produced by the scheduled doses. Routine procedures involving handling of the patient should be so timed that they occur when the effect of the regularly scheduled dose is at its peak. By this means, extra doses may be avoided.

Infection. To 8 patients, full doses of sulfadiazine (with equal amounts of sodium bicarbonate) were given by mouth, and 20,000 units of penicillin were given intramuscularly every three hours for three to seven days. These drugs were used for their bacteriostatic effect both on the tetanus bacillus and other pathogenic wound organisms and on pathogens in the respiratory tract to prevent pulmonary infection following atelectasis. In 2 patients (Cases 4 and 6) sulfadiazine was stopped because of a marked decrease in renal output. In one of these (Case 6) the drug was resumed with beneficial effect when pneumonia supervened.

Miscellaneous. Since pulmonary atelectasis of minor or major degree was an almost universal complication, frequent turning of the patient in bed, voluntary coughing and intermittent inhalation of a mixture of 5 per cent carbon dioxide and 95 per cent oxygen were instituted as routine procedures for two or three days following operation. When atelectasis developed, care was taken that the affected lobe or lobes received frequent postural drainage. Several firm slaps on the back, with the patient turned on his face or lifted up by the hips, were helpful in some cases in loosening mucous plugs in the bronchial tree. Bronchoscopy and tracheal catheterization were not employed for fear that the local laryngeal irritation caused by these procedures might induce laryngeal spasm. Atelectasis, which was so widespread in 1 case that oxygen therapy by means of a B.L.B. mask was given for two days, in most cases proved an extremely troublesome and serious complication.

Two patients (Cases 7 and 10) suffered from retention of urine from spasm of the bladder sphincters. Inlying catheters were used for a few

days for relief of this symptom and to prevent constant changing of bed linen because of incontinence.

Fecal impaction occurred in Case 4. The severe muscle spasms that were caused by its manual extraction induced us to give 30 cc. of mineral oil, through the stomach tube, each night as a routine procedure to all subsequent patients. No other impactions developed.

Summary

The experience in treating 10 cases of tetanus among German prisoners of war is reported. Of these 10 patients, 4 died.

The problems of tetanus prophylaxis are discussed and the necessity of adequate and repeated doses of prophylactic antitoxin in previously unimmunized personnel is stressed. The value of considering even slight wounds as possible foci of infection is pointed out, and some of the difficulties in diagnosis are discussed.

Attention is drawn to the difficulty of the therapeutic problem, and the management of these cases is described in detail, with emphasis on the importance of teamwork and constant individual attention for good therapeutic results.

PLASTIC SURGERY IN A MILITARY HOSPITAL*

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In 1944 the Cushing General Hospital was designated as one of nine Army centers for plastic surgery operating within the continental limits of the United States. During the first twenty months a total of 1474 patients were admitted to this section, and two thousand one hundred and ninety-six operative procedures were carried out, with no operative or postoperative mortality.

The organization and functioning of this center is of interest, not only from the standpoint of its military pattern but also because of methods and procedures, developed in the face of reduced personnel, that might prove advantageous in the operation of any civilian hospital service. Also, military medicine has impressed on its participants the value of frequent consultation in the care of patients — a type of practice to which army medicine lends itself quite easily because of the concentration of patients, even with minor illnesses, in hospitals. This concept of directing the care of patients, which had previously been utilized to advantage at the Bushnell General Hospital, was expanded at this post to include the care of the majority of the plastic surgical cases.

The lack of trained personnel, as well as the frequent change, necessitated the most efficient utilization of the time of the two trained plastic surgeons and of those who had received special instruction. For this reason the cases were divided into several groups for the purpose of concentrating the care of patients in each of these categories and also for expediting the training of nurses and corpsmen by familiarizing them quickly with problems arising in the particular group under their jurisdiction.

*Delivered at the postponed annual meeting of the New England Surgical Society, Boston, January 15, 1946.

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Organization

The cases were divided into the following five general groups: maxillofacial; hand; orthopedic; eye; and general plastic.

Maxillofacial Section

These cases comprised all requiring the combined services of a plastic and a dental surgeon. The predominant type consisted of missile wounds of the mandible and maxilla, with a smaller percentage of fractured jaws due to vehicle injuries. There were also occasional cases of mandibular tumor and cyst, palatal defects and other abnormalities encountered in civilian life.

As soon as a history had been obtained and physical and x-ray examination had been completed, the patient was presented before a conference composed of a plastic surgeon, a dental surgeon and a liaison officer, the last being the ward officer directly in charge of all maxillofacial cases. At that time a program of treatment was outlined. In missile wounds of the jaws this usually consisted of the determination of the type of splint to be applied and a decision regarding the need for sequestrectomy. The patient was then followed in either the dental or the surgical department until the next phase of treatment, when he was again presented before the conference. At this stage the question of the need for a bone graft usually arose. When nonunion was evident the type of fixation and the kind of graft were determined. Iliac bone was used in most cases, although in cases of mild nonunion osteoperiosteal grafts sufficed. Rib grafts were occasionally employed to reconstruct fractures in the region of the angle or horizontal ramus.

The dental surgeon usually assisted at the operation and carried out postoperative oral care. Several weeks later the patient was again presented before

the conference to determine the stability of the graft and the need for further surgery prior to preparation of dentures. If the dentist considered the buccal or labial sulci inadequate, an epithelial inlay was scheduled, the dentist preparing a fixation splint for the stent prior to operation. Again, the dentist assisted at the operative procedure and carried out oral care during the convalescence, introducing a denture as soon as the grafts were stable.

Under this program the simultaneous care of the patient by two departments was closely integrated. With the plan for each patient outlined and recorded in the conference, loss of time was avoided and, of more importance, the operative procedures of both departments were correlated. Cases such as those with injudicious extraction of teeth needed for splint support in palatal repair or bone graft were reduced to a negligible number. During periods of change of personnel, the conference furnished a means of maintaining the continuity of treatment by both departments until new officers had acquired a grasp of the problems involved. It was the opinion of all concerned that the conference created a most harmonious environment that was mutually instructive and effectively eliminated the misunderstandings incident to a more remote type of collaboration.

Hand Section

A similar conference was set up for the administration of several hundred cases of hand injury. The predominant injury was the gunshot or shell-fragment wound, with a smaller group of burn scars and vehicle injuries.

The conference was directed by four persons, including plastic, neurosurgical and orthopedic surgeons and a physiotherapist. After initial study each case was presented before the conference, where a course of treatment was outlined and the patient sent to the appropriate ward. A majority of the patients with missile injuries were retained on the plastic wards because of a resurfacing problem. Occasionally, the defect could be covered by rotation of local tissues, but in most cases abdominal flaps — either tubed or direct — were utilized to cover the involved areas. In a few of the smaller defects around the web spaces, flaps from the opposite arm were employed. As soon as the resurfacing had been completed, the patient again appeared before the conference for review and was transferred either to the orthopedic service for tendon and bone work or in some cases to the neurosurgical service for nerve repair. It was often arranged in conference to have two services carry out a combined procedure, such as a nerve exploration or repair with a rotation or pedicle flap.

The patients with hand deformities resulting from burns were treated primarily on the plastic service, where resurfacing with free grafts was carried out as quickly as possible. These cases were also followed in conference, where the counsel of the orthopedic surgeon in methods of splinting to minimize deformity was most valuable and where the presence of the physiotherapist integrated the surgical procedures with the graduated exercise that had to be started in the early postoperative course.

As time went on, each member of the conference became familiar with the usual methods of treatment proposed by the other members, and a number of modifications of therapy were carried out as a result of the integration of individual concepts of treatment. For example, the plastic surgeon's emphasis on the susceptibility of recent grafts to trauma led the physiotherapist to modify the treatment of this group of hand cases. All new technicians were carefully warned of the danger of too forceful massage, and the use of infrared lamps and whirlpool baths at the usual temperature was eliminated.

Orthopedic Section

This group of cases was composed mainly of missile wounds of the lower extremity, presenting some of the most trying problems in rehabilitation. The great majority of patients had been admitted on the orthopedic service, where the initial phase of treatment, consisting of the application of traction and casts and the exploration of draining wounds and sinuses, had been carried out. As soon as feasible many of these patients were brought to a conference composed of an orthopedic and a plastic surgeon, where the former surgeon presented his opinion of the type of bone and tendon reconstruction that would be needed in the future and the latter outlined a plan of resurfacing to permit the maximum surgery that might be anticipated.

Occasionally, free grafts were sufficient, but the average case required a much more stable integument, so that the usual recommendation for coverage was a direct pedicle flap transferred from the opposite leg or thigh. A few defects were in such a position or of such magnitude that the cross leg graft was not appropriate, and thoracoepigastric tubed pedicle flaps brought down via the wrist were necessary. Again, combined procedures were sometimes decided on. Rotation flaps to cover bony defects could be combined with iliac bone chips to fill depressed areas, either to increase stability of the affected bone or to fill cavities that could not be completely obliterated by the rotated flap. In multiple injuries two teams — an orthopedic and a plastic — arranged to carry out separate procedures on the same patient simultaneously.

Eye Section

Although comprising a smaller group than the ones mentioned above, the cases of missile wounds of the orbit presented rather complex problems for the integration of functions of the ophthalmologist, neurosurgeon, plastic surgeon and the ocular pros-

thetic department. Many of these patients had suffered loss of a portion of the bony wall of the orbit, with or without involvement of the dura. Patients in whom the only problem was restoration of bony contour of the supraorbital or latero-orbital region were treated on the neurosurgical service, usually by the introduction of a moulded tantalum or lucite plate. When there was associated deformity of the soft tissues of the orbit, it was usual to carry out reconstruction of the lids and conjunctival sacs before the tantalum plate was introduced.

The intraorbital reconstruction was planned in conjunction with the ophthalmologist and the dental surgeon in charge of the construction of acrylic prostheses. In general, the first problem was replacement or reconstruction of the lids. Adjacent flaps or free grafts were used in almost every case, to afford external covering, with the introduction of ear cartilage when necessary to provide support. The adequacy of the conjunctival sac was then evaluated. Occasionally, in questionable cases, the prosthetist was able to dilate a sac of borderline dimensions with graduated conformers and to obviate the need for grafting. In the severer injuries mucous-membrane grafts were introduced to enlarge the socket, and as soon as the graft was healed, the patient was transferred to the prosthetic department, where a conformer was inserted immediately to prevent contracture of the graft. While the final prosthesis was being constructed, minor revisions such as eyelash grafts were carried out.

General Plastic Section

In all cases that did not fall into the special categories listed above the patients were admitted to a general plastic section, where there was no significant duplication with other surgical fields.

Many cases of severe facial burn presented problems in the reconstruction of deformed ears, partial nasal loss, lip contractures and loss of cheek, forehead and orbital skin. Ear reconstruction was performed by the use of adjacent retroauricular skin when the loss was confined to the helix; in more extensive losses, it was necessary to restore cartilage support by means of preserved rib cartilage taken during autopsies and kept under sterile conditions until needed. If the retroauricular skin had been severely damaged by the original trauma, the scar was replaced by a free skin graft, which was later used for the auricular reconstruction.

Preserved cartilage was also used extensively for building up depressions of the infraorbital ridge and malar region. These fractures were well consolidated by the time of arrival at the hospital, so that no attempt at repositioning was made, even in cases in which no loss of substance had occurred. Cartilage was used both in the form of carved blocks and in the form of diced material, and occasionally in combinations of the two.

Nasal deformities varied from relatively minor losses from burns to total nasal loss due to shell fragments. The small losses of the alar rim were restored by free grafts from the rim of the ear, including a strip of cartilage for support. The more extensive losses required either pedicle flaps from the forehead or tubed flaps from the cervical or humeral regions.

Deformities about the mouth at times presented complex problems in reconstruction. Whenever possible the reconstruction was performed by rotating skin from the adjacent cheek or cervical region to afford a covering that most closely matched in color* and texture the absent tissues. Occasionally the defect was too extensive for such procedures, and tubed pedicle flaps from the lower neck, acromiopectoral region or thoracoepigastric region were utilized.

Operating and Dressing Rooms

To utilize to the maximum degree the available time of the trained members of the staff, it was frequently possible to have two teams supervised by one plastic surgeon. This was not considered in any sense an ideal situation but offered a practical expedient to aid in keeping up with the required work. Furthermore, it was considered essential to eliminate so far as possible all delay between operative cases.

The preparation of a plastic case for operation often requires a good deal of time — for example, when, to resurface a hand, the affected hand and forearm and the donor area, such as the abdomen, chest or thigh, must be prepared. To eliminate the delay of preparing a patient in the operating room, the following routine was established. After a period of instruction, a nurse selected as the supervisor of preoperative preparation was able to acquire a firm grasp of the principles involved in the preparation of plastic patients. Corpsmen were assigned to function under her jurisdiction. Patients arriving at the operating pavilion were taken to a preparation room where a detailed description of the field of operation, submitted by the surgeon on the operative slip, was available. All operative fields were shaved, thoroughly cleansed with soap, alcohol, ether and Zephiran and covered with sterile towels, the patient being retained in the preparation room until an operating room was free, when he was transferred to an operating table and the draping was completed. In the preparation of facial cases, pontocaine drops were administered to the eyes to prevent discomfort. In this way it was possible to

*Facilities eventually became available for the artificial pigmentation of scars and grafts conspicuous because of color tones that contrasted sharply with the surrounding tissues. The success of this technic, which was essentially the tattooing of the unsightly area with blended mineral pigments, depended in large part on the appreciation of color tones and on the ability of the operator to keep the shading on the light side rather than creating an overly dark tone, which was much more difficult to correct. This part of the program was delegated to an artist associated with the department whose previous training in the blending of colors gave him particular qualification in this field.

complete almost all types of preparation before the anesthetic was administered, from ten to forty minutes' delay in the operating room being thus avoided.

Another feature that not only saved considerable time but also prevented confusion and omissions in postoperative care was the organization of the dressing section. Two large and completely equipped dressing rooms, as well as two smaller supplementary dressing rooms, were put in operation as soon as possible, and in the great majority of cases postoperative treatment was carried out in these centralized spots. A nurse was placed in charge of the entire dressing section and given the responsibility of training newly assigned nurses in plastic procedures. The dressing nurses worked on a full-time basis in the dressing rooms and did not have ward responsibilities. When the program was well under way, about nine hundred dressings, or 85 per cent of the total number, were carried out weekly by nurses without supervision.

Toward the end of each operation, the operator dictated two sets of instructions: the usual postoperative orders and, on a separate sheet, the dressing orders. Each dressing-order sheet was sent directly to the proper dressing room, where dates of dressings were filed and a list of his own dressings sent daily to each surgeon, delays and omissions in aftercare being thereby eliminated.

Summary

In organizing the plastic surgery section of an Army hospital in the United States, it was found expedient to divide patients into five categories for purposes of administration and professional care. A conference system was established to integrate plastic surgical procedures, with necessary and concomitant treatment by other services; the method of operating these conferences is described. Several practical points in expediting operative and postoperative treatment are discussed.

MEDICAL PROGRESS

PHYSIOLOGY (Concluded)*

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Toxic and Hepatic Factors in Shock

It is now generally agreed that the primary factor in the development of the shock syndrome is a reduction in the effective volume of circulating blood. Whether through hemorrhage, vasodilatation in traumatized regions of the body or loss of fluid through damaged blood vessels in those areas, a discrepancy between the capacity of the vascular system and the amount of blood available to fill it occurs, and the blood pressure falls. If this discrepancy is too great, the body's compensatory mechanisms are overwhelmed, and death quickly follows. With a somewhat lesser degree of oligemia this does not happen, but the blood pressure is more or less rapidly brought back to normal, and spontaneous recovery takes place. In dogs this may occur after bleeding of as much as 30 to 40 per cent of blood volume.[59] Somewhere between these two extremes, there appears the condition known as shock in which compensation is adequate only to maintain a prolonged period of hypotension at the end of which the victim finally succumbs. During the greater part of the hypotensive period the condition is reversible, and if adequate replacement therapy is carried out, the animal recovers. In the terminal stages, however, the condition becomes irreversible, and despite transfusion or other treatment, recovery does not occur. Much of the recent work on the shock problem has centered around the question of the factors involved in the transition from the reversible to the irreversible stage.

It is clear that continuation of hemorrhage or the further loss of fluid through damaged capillaries in the traumatized region can be and probably is often responsible for the terminal failure of compensation. These factors cannot, however, be the only or even the major ones that operate at this point. Thus, Scott[60] compared the increase of leg volume in tourniquet shock in dogs and showed that no difference can be demonstrated between the dogs that die and those that recover. The leg volume of dogs that recovered increased on an average by 3.69 per cent of the body weight, whereas in a comparable series of animals dying from early shock the total volume increase was 3.43 per cent of body weight and in a group of animals in deeper shock fatal to all animals, the volume increase was 4.03 per cent of body weight. Friedberg and Katz[61] applied plaster casts to the legs of dogs shocked by venous occlusion in an attempt to prevent local fluid loss, but were unable to reduce the mortality of the procedure in this way.

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Haist and Hamilton[62] found that by reclamping the legs of animals shocked by the tourniquet method before the stage of irreversibility had set in, it was possible to produce recovery despite the fact that all or nearly all the fluid loss into the traumatized leg had already occurred. Green and co-workers[63] found that fatal shock could be produced by the tourniquet method in fully anesthetized dogs with a fluid loss of an average of 18 cc. per kilogram — appreciably less than the fatal hemorrhage volume, which amounts to 50 cc. per kilogram or more. These workers concluded that although the initial fall of arterial pressure of dogs traumatized by this procedure is induced principally by a combination of reactive vasodilatation in the traumatized legs and initial rapid loss of body fluid into the traumatized tissues, the continuing steady decline of arterial pressure is probably due to a continuing smaller loss of fluid into the traumatized tissues, as well as to the onset of a vicious circle whereby the reduced systemic blood flow results in widespread damage to the vascular system and perhaps also to other tissues.[64]

An attractive concept of the vascular changes by which this vicious circle is introduced is afforded by the recent studies of Chambers and his associates,[65–68] who studied, in the mesenteries of various animals, the response of the small blood vessels to hemorrhage and trauma. Following hemorrhage or trauma there is a marked increase in the activity of the small arterioles and metarterioles characterized by marked vasoconstriction of the vessels and increase in the rate of their rhythmic dilatations and constriction that these authors call vasomotion, as well as such an increase in the sensitivity to adrenalin that complete local shutdowns of circulation may take place on injection of a 1:60,000,000 solution of adrenalin. Because of precapillary constriction, capillary flow is restricted to central channels. Flow through the open capillaries is nevertheless rapid and unidirectional. During the next reversible stage of low blood pressure, vasomotion diminishes and the contractile phase becomes progressively shorter. The response to adrenalin falls toward normal. There is a marked slowing of the flow in the capillaries and an increase in the number of capillaries having a blood flow because of the diminished vasomotion. Venules begin to dilate, and the venous flow is sluggish. Finally the hyporeactive stage is reached in which vasomotion ceases in dilatation. The response to adrenalin is greatly reduced, only a fleeting response occurring to the injection of a1:2,000,000 solution of adrenalin. The arterioles begin to dilate, stagnation of blood occurs in the many open capillaries and venules and venular capillaries become distended by back flow. When this stage is reached, further transfusion is without effect and the transfused blood is trapped along with much of the other blood in widely dilated stagnant capillaries. According to these authors, therefore, the essential factor in the change to the irreversible stage is the loss of tone and the development of irresponsiveness in the small peripheral blood vessels that so reduces the effective circulating blood volume that the blood pressure can no longer be maintained. Fine and Seligman[69] came to much the same conclusion from the study of the distribution of radioactive proteins introduced into the blood stream in hemorrhagic shock.

In explaining the mechanism of these changes in small peripheral vessels, which appear to lie at the root of the problem, a good case can be made out for the action of local tissue anoxia. It is clear from the work of Chambers and his co-workers that blood flow in the viscera must be markedly reduced in all stages of shock and that this is apparently even more pronounced in the peripheral system. Thus, Levinson and Essex,[70] among others, have studied the response of the ear vessels of rabbits through transparent chambers inserted in the ears of animals in traumatic shock. They noted that, as the period of onset of shock approached, there were phases when the blood flow in the chamber was shut off through arteriolar constriction. The effect of such vasoconstriction is, of course, to reduce markedly the blood flow in many organs of the body. Dole et al.[71] estimated renal blood flow in dogs by means of para-aminohippuric acid and creatinine excretion rates and found the blood flow ranging from 4.6 to 12.0 liters per minute per kilogram of kidney in normal animals before hemorrhage; after hemorrhage the blood flow ranged from 0 to 3.84 liters per minute per kilogram. The latter figure was obtained in an animal having a blood flow of 6.72 liters at a blood pressure of 138 mm. of mercury, and the value of 3.84 liters was obtained on reduction of the blood pressure by hemorrhage to 120 mm. In consequence, there is a greater extraction of oxygen from what blood does flow through most organs of the body, and venous blood returns to the heart with much less than its normal content of blood.[72]

From the work of Shorr, Zweifach and Furchgott,[73] however, it appears that the depression of peripheral blood vessels is produced by the action of a humoral substance referred to by them as V.D.M. (vasodepressor material), which is elaborated by skeletal muscles and by the liver. The material is apparently formed by muscles in small quantities in the compensatory stages of shock, but not by the liver at this time, nor does it appear in the blood stream of animals in the preirreversible stages, when the liver is capable of destroying or inactivating the material. With the onset of irreversibility, the liver not only fails to protect the circulation against the larger quantities of V.D.M. that escape from skeletal muscles but also contributes significant quantities of the material itself. The cause of this change in liver function is the failure of the oxygen supply to that organ.

The liver is unique among the organs of the body in receiving the larger part of its oxygen supply from the venous system. McMichael[74] found that in the

cat about two thirds of the oxygen supply of the liver comes from the portal vein under normal conditions of blood pressure. The oxygen content of the hepatic vein is always less than that of the portal vein, and obstruction of the portal vein to a lobe causes central degeneration in its lobules. Naturally, then, the liver is especially vulnerable to the great reduction in the oxygen content of venous blood that occurs in the compensation state of shock, and in the experiments of McMichael the average saturation of portal venous blood fell from 50 per cent when the mean arterial pressure was 180 mm. of mercury to only 25 per cent when, because of hemorrhage, the mean arterial blood pressure fell to 90 mm. It is now known that this deficiency of oxygen causes a number of changes in liver function. The liver loses its ability to store glycogen,[62] and the rate of replacement of plasma protein after hemorrhage is diminished.[75, 76] Thus, a normal unanesthetized dog not in shock replaces from 10 to 29 per cent of its total prehemorrhage plasma proteins within twelve hours after the hemorrhage, or a total weight of from 6 to 15 gm.; whereas dogs in shock replace only about a tenth of this amount in the same time. Amino acids increase in concentration in the blood owing to an increased production due to protein breakdown in peripheral tissue, either because of direct trauma or because of anoxia and because the damaged liver can no longer readily deaminate them.[77, 78] Disturbance of carbohydrate metabolism can be seen in the increase in the level of lactic and pyruvic acid in the blood,[79] and the oxygen consumption of liver slices falls off. Whereas liver slices from normal animals consume an average of 5.6 cu. mm. for each milligram of initial dry weight of tissue per hour, the liver from animals in a fair state after hemorrhage consumes but 3.6 cu. mm. and that from animals in a poor state only 1.82 cu. mm. It should be noted that in rats, especially those recently fed, the effects of shock on the liver are not so marked as those in fasted rats, and in fact in fed rats the liver is also apparently more resistant to anoxia.[80] The liver also loses approximately 10 to 25 per cent of its total potassium content during the course of shock or anoxia.[81]

As might be expected, the inhalation of pure oxygen in hemorrhagic shock is not of great assistance in improving the situation so far as the liver is concerned, inasmuch as the arterial blood saturation does not fall markedly during the critical preshock stage and the anoxia of the liver depends rather on the increased extraction of oxygen in the face of a diminished blood flow. Wood, Mason and Blalock,[82] however, report experiments in hemorrhagic shock in dogs in which inhalation of pure oxygen increased the content of portal venous blood from 12.52 to 15.21 vol. per cent. Frank, Seligman and Fine[83] shocked dogs by hemorrhage and continued low blood pressures for approximately two to four hours. Animals that were then perfused by exchange circulation with donor animals in which arterial blood from the donor entered the jugular vein were not helped by the procedure, and nearly all died. On the other hand, cross circulation in the same way, except that the arterial blood of the donor entered the shocked animal through the splenic vein and therefore added arterial blood to the portal circulation, made it possible for 11 of 12 animals thus treated to survive. It is obvious that preservation of liver function is of crucial importance in recovery from advanced hemorrhagic and other types of shock and that the essential factor is the maintenance of an adequate oxygen supply to the liver.

Apart from the apparently physiologic V.D.M., bacterial toxin must also be considered, at least in experimental shock. Aub and co-workers[84] found toxin due to the presence of a Clostridium exotoxin in 28 per cent of experiments in which fluid was collected from traumatized muscles and injected into normal dogs. Prinzmetal, Freed and Kruger[85] found that shock was produced in 9 of 12 dogs when the quadriceps muscle was removed with aseptic precaution, crushed and replaced. When the muscle was removed and replaced without crushing, shock was not produced. If bacterial growth was prevented by appropriate bacteriostatic agents, shock did not occur. It is also apparent that damaged muscles lose potassium in large quantities and that in appropriate circumstances, more particularly when kidney function is suppressed, this ion may have a toxic effect.[86–90] Bacterial toxin, but not potassium, might account for the shock reported in normal animals that are cross-perfused with animals in shock from application of tourniquets.[91] In hemorrhagic shock Frank, Seligman and Fine[83] failed to find signs of shock in the normal animal used for cross circulation with a shocked animal.

From all this material it is possible to put forward the following view of the events that transpire in the course of hemorrhagic or traumatic shock. A reduction in effective blood volume through hemorrhage or through vasodilatation and loss of plasma in damaged regions occurs. Compensation for the diminished blood volume takes place by means of increased arterial or venous constriction, — at least in part on a sympathetic basis,[92] — and an increased vasomotor activity in the metarterioles and precapillaries is due to the production of a vasoexcitor substance from the kidney[72] that may be the same as the renal hypertensive material liberated as the result of renal ischemia — it is known that the kidney removes only a small proportion of the oxygen from the blood that circulates through it, and even when blood flow is markedly reduced, it is not able to increase its utilization.[71, 93] There is also some evidence that the vasoconstrictor substances are produced in shock even in the absence of the kidneys.[94] If, as a result of these compensatory measures, peripheral blood flow is excessively curtailed, the oxygen content of the portal venous blood becomes dangerously low, and the liver begins to suffer from

anoxia. It therefore fails to destroy the relatively small quantities of V.D.M. produced by the damaged or partially anoxic tissues and, in addition, produces V.D.M. itself. This material, which acts on the peripheral vessels to cause vasodilatation and stagnation of blood in an increased number of open capillaries, thus further reduces effective blood volume and sets up a vicious circle of lowered blood pressure, further tissue and hepatic anoxia and, as a consequence, further release of V.D.M.

The Artificial Kidney

The results of animal experimentation have for some time held out the promise that uremia and anuria in man might be treated by the removal of the abnormal accumulation of metabolic products by their dialysis through the membranes of artificial kidneys or through natural membranes, such as the peritoneum.[95–98] These attempts stem directly or indirectly from the work of Abel and his associates [99–101] in the years preceding World War I. The general concept of finding some substitute for impaired renal function is, of course, of much earlier origin. Thus, Abel recognized his predecessors in the method, to which he gave the name plasmapheresis, in which blood was drawn from nephrectomized animals, centrifuged and separated from the plasma and the washed corpuscles returned to the animal in Locke's solution. Other less direct methods have also been suggested, as well as the method of cross circulation with an animal with normal kidneys proposed by Nyiri[102] from consideration of the fact that in parabiotic animals — that is, surgically created Siamese twins in which vascular intercommunication has been established across the communicating bridge of tissue — a single kidney may be sufficient for the excretory processes of both animals. Nyiri performed two successful experiments: in one the donor dog was nephrectomized and in the other the dog was rendered uremic by uranium poisoning. In both the nonprotein nitrogen of the donor dog fell, whereas that of the recipient rose, only to be excreted without damage to the normal animal. Other experiments failed, however, because of clotting in the communicating tubes. With the introduction of more active preparations of heparin this difficulty was overcome, and Thalheimer[103,104] was able to simplify the technical problems by the method of exchange transfusions. By this method approximately 200 cc. of blood was exchanged between an anuric and a normal dog and the process repeated twenty to forty times. Thus, in one experiment, the nonprotein nitrogen of the anuric animal fell from 75 to 61 mg. per 100 cc. after twenty exchanges and to 54 mg. after forty. At the same time, the nonprotein nitrogen concentration of the normal dog rose from 22.5 to 36.5 mg. per 100 cc., but this was excreted in a short time without harming the animal.

The method of Abel, Rowntree and Turner,[99] however, envisaged the utilization of an artificial membrane constructed of collodion tubes through which arterial blood flowed only to return to the animal through an appropriate vein. The dialyzing tubes were then immersed in a fluid bath, in which substances might diffuse from the blood, and the diffusion of the substances out of the blood could then be regulated by variation in the composition of this fluid. If the fluid was of the same composition as normal plasma, the apparatus could be expected to remove only abnormal constituents or normal constituents present in abnormal concentration. The authors made the following observations:

> Any constituent of the blood which it is desired to retain in the animal's system may be prevented from dialyzing out by the addition of the proper amount to the outer fluid. Where the object of the experiment is merely to remove from the blood abnormal constituents, as e.g., poisons, or constituents specifically secreted into the blood by a certain organ, normal serum from a similar animal may be used, thus insuring complete balance of all normal constituents, inside and out.

Hirudin prepared from the heads of leeches was used as an anticoagulant. There was a considerable fall in blood pressure when the apparatus was put into operation: when a dog weighing 5.8 kg. was connected to a dialyzer consisting of sixteen tubes each 20 cm. long and 8 mm. in diameter, the apparatus containing in all 200 cc., the arterial blood pressure (presumably, the mean pressure) fell from 120 mm. of mercury to 64 mm. Lung edema was noted in some experiments. The method was used to collect various normal and abnormal material from the blood, and it was shown that nonprotein nitrogen constituents appeared in the dialysate in approximately the proportions in which they existed in the blood. It was, however, apparently Necheles[105,106] who first used the method to reduce the nonprotein nitrogen of nephrectomized dogs. In two experiments the nonprotein nitrogen was reduced from 122 to 101 and from 218 to 161 mg. per 100 cc., respectively, by several hours' diffusion through a dialyzing apparatus constructed of ten tubes of goldbeater skin having a total area of approximately 4000 sq. cm. Apparently, Haas[107, 108] also had success in the dialysis of blood in living dogs with a collodion-tube apparatus patterned after Abel's, but had difficulty owing to the toxicity of the hirudin he employed. When he was able to obtain less toxic preparations of this anticoagulant, further experiments on dogs were carried out and a single short experiment was tried in man, a relatively short tube system being used. In the fifteen minutes of the experiment an indican clearance of 150 cc. was established.

The successful application of this technic in man was made possible by the development of heparin and of cellophane from which a dialyzing tube 23 mm. wide and about 45 meters long was constructed by Kolff and Berk.[96, 98] Through this tube blood was transported in small quantities at a time to ensure spreading over a large surface and thus increas-

ing the rate of dialysis. Blood was dialyzed against a solution containing 0.6 per cent sodium chloride, 0.2 per cent sodium bicarbonate, 0.04 per cent potassium chloride and 0.5 to 2.0 per cent glucose. In the absence of calcium from the dialyzing solution this ion was lost from the blood and was replaced by intravenous injection of calcium gluconate. In trials of the apparatus in patients suffering from anuria it was possible to remove large quantities of nonprotein nitrogenous material from the blood, and it appears that in the second case, as reported by Snapper,[98] the life of the patient was in fact saved. On the eighth day of anuria the blood urea nitrogen was 184 mg. and the serum potassium 55 mg. per 100 cc.; the patient was comatose, and there was edema of the buttocks and legs. Dialysis through the artificial kidney was carried out for eleven and a half hours, during which 80 liters of blood was circulated through the apparatus and 60 gm. of urea removed. The blood urea nitrogen fell to 57 mg. and the serum potassium to 19 mg. per 100 cc. It is apparent that at a serum potassium level of 55 mg. per 100 cc. the lethal limits had practically been reached and death was to be expected at any time. Death from this cause being averted by the removal of the excess potassium, the patient's life was preserved for another day, and by that time renal function had begun to reappear and the patient recovered.

Impressed by the difficulties with clotting encountered by workers in the preheparin days, Ganter[109] employed the peritoneum itself as a dialyzing membrane; he reported a case of uremia with pleural effusion in which replacement of 750 cc. of pleural fluid by saline was followed by clinical improvement. He also successfully reduced the nonprotein nitrogen of anuric guinea pigs and rabbits by intraperitoneal lavage with saline. Rosenak and Siwon[110] then suggested a constant intraperitoneal perfusion at the rate of 1 to 4 liters per hour, believing that the rate of diffusion of materials into the perfusing solution would be more rapid if it were constantly refreshed with new fluid. Since that time practically all workers have employed the constant-drip method, although it is clear from the work of Darrow and his associates[111] that fluid left in the peritoneal cavity rapidly comes into equilibrium with blood and that the nonprotein nitrogen content of this fluid equals that of blood within fifteen to twenty minutes. Although it was apparent from these and other investigations[112–114] that the method might temporarily reduce the nonprotein nitrogen and diminish the symptoms of uremia, there was little evidence that the life of the uremic animal could thereby be prolonged, and it is apparent that infection posed a considerable problem. The method was nevertheless employed in man by Balázs and Rosenak,[115] who perfused the peritoneal cavity of 2 patients suffering from uremia consequent to mercury poisoning with 12 liters of fluid. In the first case, in which the patient was perfused for half an hour with a 4.2 per cent dextrose solution, the nonprotein nitrogen fell from 184 to 158 mg. per 100 cc., whereas in the second case, after perfusion for an hour and a half with 19 liters of an 0.8 per cent sodium chloride solution, the nonprotein nitrogen fell from 149 to 139 mg. per 100 cc. By the introduction of a rigid aseptic technic assisted by the use of penicillin and sulfadiazine, Seligman, Frank and Fine[116] were able to prolong the period of dialysis to permit nearly continuous irrigation for twenty-four to thirty-six hours at a full rate of 25 to 35 cc. per minute and thereby to control uremic symptoms effectively and to produce marked reduction in blood urea concentration in dogs rendered anuric by bilateral nephrectomy. Once the nonprotein nitrogen was lowered to more normal concentrations, shorter periods of dialysis (from eight to ten hours) carried out once in every twenty-four hours proved sufficient to maintain the animal, and it is clear that life in these animals was prolonged for from three to ten days. Abbott and Shea[117] report an animal kept alive for nine days after bilateral nephrectomy, which also represents a clear prolongation of the survival period. Finally, the Boston workers have reported the successful treatment of uremia following sulfadiazine therapy in which the therapy was begun after eight days of almost complete anuria. After four days of perfusion, the blood urea concentration fell from 72.7 to 37.8 mg. per 100 cc. Clinical improvement was noted, and on the fourth day urine flow began again. The daily urea output by peritoneal drainage varied from 12 to 20 gm. per day, and the blood urea clearance averaged nearly 15 cc. of blood per minute. Despite extreme care and the liberal use of penicillin, signs of peritoneal infection appeared but did not interfere with the successful treatment of the patient.

Treatment of Dehydration in Infants

In a previous report in this series,[86] attention was called to the fact that in cases of water deprivation or loss of body fluid there is an extra secretion of potassium unassociated with nitrogen loss in the urine. By the excretion of such potassium in a higher concentration in urine than it was found in cell water, the body was able to retain cell water in the plasma and thus to mitigate the loss of extracellular fluid. The pediatricians were among the first to note this phenomenon, which was reported by Gamble and co-workers[118, 119] in fasting diabetic children and in diarrheal disease in children. Darrow[120] has recently estimated the amount of intracellular potassium lost in cases of severe dehydration due to diarrhea in infants and has found cases in which the total loss of intracellular potassium amounted to approximately one fourth of the estimated normal potassium content of the body.

It is known that a deficiency of potassium is not without harmful effects; the paralysis of familial periodic paralysis is one such condition, and muscular

weakness may be produced in man and experimental animals when potassium is excessively low. More important, a low potassium level is associated with the development of heart failure, with recovery when adequate potassium is administered, and both muscular and myocardial weakness have been noted in infants suffering from the dehydration of diarrhea. These facts and the general consideration that replacement therapy ought on theoretical grounds to be complete have led Govan and Darrow[121] to use potassium in the treatment of the dehydration of diarrhea in infants. After the initial treatment of shock, replacement of fluid was effected during the first twenty-four hours by parenteral administration of from 80 to 150 cc. per kilogram of body weight of a mixture of potassium chloride, sodium chloride and sodium lactate. After the first day smaller amounts (20 to 50 cc. per kilogram of body weight) were given daily so long as the stools remained watery. In some cases from 1 to 2 gm. of potassium chloride was added to each day's feeding when oral feeding was begun. The new method of treatment was instituted in September; during the preceding two months 53 patients had been treated by the conventional method, and 17 had died. During September and October, 50 patients were treated by the new method, and only 3 died. In general, the potassium therapy did not shorten the period of diarrhea, but it did enable the infants to withstand a disease that would otherwise have been fatal.

The most significant complication of the treatment may prove to be potassium intoxication. Many patients are presented in a state of shock after a considerable period of illness. In such circumstances the combination of tissue anoxia and low renal output may lead to the development of deceptively high concentrations of potassium within the serum. The immediate administration of potassium-enriched fluids to such patients may be dangerous, as was shown in the case of potassium intoxication reported by Govan and Weiseth[122] in which a serum potassium level of 12.3 milliequiv. per liter was noted and the typical, premortal, intraventricular block developed. Fortunately, the condition was recognized, and recovery was complete after the administration of 15 cc. of calcium gluconate and 150 cc. of hypertonic glucose solution. It has therefore been suggested that in the period of shock in moribund patients and perhaps in all cases of severe diarrhea, infusions of physiologic saline and glucose solution should be initiated for an hour or until urine formation is assured, after which the solution containing potassium chloride can be started. So characteristic are the electrocardiographic signs of potassium intoxication that this instrument, in combination with a cardioscope, or one of the modern visual writing instruments, might well be employed as a constant check on the rate and quantity of potassium infusion.

Splenic Hormone Control of Platelet Formation

Although it seems well established from the work of Taylor and others described in an earlier report in this series[123] that platelets play no great part in the primary mechanisms responsible for blood clotting, it is equally obvious that they are important in causing clot retraction and in sealing off injured capillaries after damage. Whatever their specific function may be, bleeding takes place when they are excessively reduced in the blood stream, and a dramatic increase in the number of platelets occurs along with cessation of symptoms when the spleen is removed. A paper by Dameshek and Miller[124] provides the major outline of an acceptable theory of platelet regulation. Studying the megakaryocytes of sternal bone-marrow punctures in 10 patients with normal hematologic findings, they established a normal megakaryocyte count of not more than 300 per million nucleated cells. About two thirds of these megakaryocytes contained platelets or platelet-like bodies at the periphery of the cytoplasm and were apparently actively producing platelets. Differential counts of megakaryocytes were made in 5 cases of acute idiopathic thrombocytopenic purpura before splenectomy, and it was found that the number of megakaryocytes per million nucleated blood cells was on the average three times greater than that in normal subjects and only about 14 per cent of the megakaryocytes showed obvious platelet production. Following splenectomy, the number of platelets became sharply increased and approximately 73 per cent of megakaryocytes showed platelet production. Huge masses of platelets were seen extruding from previously unproductive megakaryocytes, and these also occupied large parts of the microscopic field.

The hormonal nature of the influence exerted by the spleen on platelet production was suggested as early as 1915 by Frank, who with Mines, in 1917, held the belief that the material was a toxic substance.[124] In 1938 Troland and Lee[125] described the extraction, from the spleens of patients suffering from idiopathic thrombocytopenic purpura, of a material that reduced the number of platelets in the circulating blood of rabbits, cats, dogs and monkeys when injected in fairly large amounts. Since that time the observation has been confirmed by a number of other investigators, but not by all.[126–131] The concept held by Dameshek and Miller[124] regarding the pathogenesis of the disease is that it is due fundamentally to an abnormality of the spleen that exerts an unusual effect on the production of platelets from megakaryocytes in the bone marrow by arresting the maturation of megakaryocytes. They postulate a hormonal relation between the spleen and the bone marrow and describe the condition as hypersplenism or hypersplenic thrombocytopenia.

This implies that the spleen normally regulates the maturation of megakaryocytes by the release of smaller quantities of its hormone, and Dameshek and Miller point to the persistently high platelet level that may be present for long periods after removal of a normal spleen. They also point to the association of thrombocytopenia with other conditions in which splenomegaly occurs. Although Dameshek and Miller have confirmed the presence of a platelet-reducing substance in extracts of spleens from cases of idiopathic thrombocytopenic purpura, the final link in the chain of evidence requires to be forged — namely, the unequivocal demonstration that an extract of normal spleen can cause a fall in platelet count. The hormonal studies also need to be controlled by means of bone-marrow punctures to demonstrate that the reduction of thrombocytes following injection of extract results from the arrest of megakaryocytic delivery of thrombocytes and not from nonspecific toxic action on the platelets themselves. Some observers have noted that, following reduction of thrombocytes by injection of extracts, there is occasionally a temporary thrombocytosis in the recovery phase. This suggests that failure of platelet delivery is in fact involved and that once the barriers to delivery are removed, the platelets again flood into the blood stream.

Pituitary-Adrenal Hormonal Control of Lymphocytes

The nature of the hormonal regulation of another formed element of the blood, the lymphocyte, together with the physiologic significance of the reaction, has recently been elucidated through the work of White and Dougherty,[132–136] reviewed recently by Cope and Rosenfeld.[137] According to these investigators the influence of the adrenal cortex on lymphoid tissue was first noted by Addison, who observed hyperplasia of this tissue in the disease that bears his name. Lymphoid-tissue hyperplasia is also found in experimental animals after adrenalectomy, whereas adrenocortical hypertrophy and injection of adrenocortical hormone cause involution of the thymus and other lymphoid tissue. These adrenocortical effects are in turn under control by the pituitary gland, for injection of pituitary adrenotropic hormone produces a profound lymphopenia that does not appear if the pituitary hormone is given to adrenalectomized animals. Only compounds of the adrenal cortex that have a gluconeogenic function (compound E of Kendall) induce lymphopenia, which results from the failure of delivery of lymphocytes into the circulation because of profound degenerative changes taking place in lymphoid tissue. These changes were found within an hour after the injection of either adrenotropic or adrenocortical hormone and persisted for as long as six hours. They were characterized by pyknosis of medium-size and small lymphocytes, the shedding of the cytoplasm of lymphocytes, a decreased number of lymphocytes in the lymphoid tissue and extreme edema of all lymphatic structures studied. During this period mitosis ceased. Concomitantly, there was an increase in the serum protein associated with the gamma globulin fraction and an increase in circulating antibodies. From this time relation among histologic changes in lymphoid tissue, blood lymphocyte levels, serum protein concentrations and antibody titers, the authors concluded that a portion of the increased serum protein is antibody globulin derived from lymphocyte dissolution. This mechanism is shown by the authors to account for the so-called "anamnestic response" — that is, the enhancement of antibody titers in the serums of previously immunized animals by a wide variety of unrelated stimuli, as well as by such toxic substances as benzene and potassium arsenite.

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MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE COUNCIL

Special Meeting, October 2, 1946

A STATED meeting of the Council was called to order by the president, Dr. Dwight O'Hara, Middlesex South, on Wednesday, October 2, 1946, at 10:30 a.m. in John Ware Hall, 8 Fenway, Boston. Two hundred councilors (Appendix No. 1) were present.

In opening the meeting the President read the following obituaries:

CHARLES SUMNER ADAMS. — Dr. Adams was born at Carlisle on October 12, 1869. He was educated at the Howe School in Billerica and at Berwick Academy. He graduated from the Harvard Medical School in 1894 and settled in Quincy the same year. In 1900 he married Frances Gertrude Monahan, who survives him, with two daughters.

Dr. Adams served as vice-president of the Norfolk South District Medical Society in 1911 and 1912, and as president in 1913 and 1914. Thereafter he was continuously in the service of the Society until his death. He was alternate nominating councilor for eight years, nominating councilor for two years, councilor for twenty-one years and supervising censor for twenty-one years. His death was said to be due to carcinoma of the intestine.

HENRY MAYOR LANDESMAN. — Dr. Landesman was born in 1884 and graduated from the College of Physicians and Surgeons in Boston in 1917, being licensed to practice the same year in Massachusetts. He was a councilor for the Norfolk District Medical Society from 1935 to 1940 and from 1944 until his death. Between 1937 and 1944 he served as secretary of the Committee on Automobile Insurance Claims. He was sixty-one years of age at the time of his death.

WILLIAM D'ARCY KINNEY. — Dr. Kinney was born in 1873 and received his medical degree from Bowdoin Medical School in 1899. He had practiced in Osterville for nearly half a century. He was president of the Barnstable District Medical Society from 1913 to 1915, commissioner of trials from 1915 to 1919 and a censor in 1912 and 1913 and from 1916 to 1919. He was a supervising censor from 1922 to 1946 and a member of the Council from 1919 to 1946. He was a member of the Nominating Committee from 1922 to 1946, a member of the Executive Committee of the Council from 1941 to 1945, an alternate member in 1945 and 1946, a member of the Committee on Public Relations from 1942 to 1946 and representative to the Massachusetts Central Health Council from 1930 to 1946. Dr. Kinney was associate medical examiner for Barnstable County for a period of about twenty years. His widow and a son survive him.

Although Dr. Kinney was not actually a member of the Council at the time of his death on July 12, he had been active in its affairs for nearly thirty years and he will be widely recalled as an unusually faithful, interested and helpful fellow of the Massachusetts Medical Society.

WALTER HALL PULSIFER. — Dr. Pulsifer, of Whitman, died on September 26. He was born in 1883. He graduated from Tufts College Medical School in 1908 and joined the Massachusetts Medical Society in 1910. Throughout his professional life he was especially interested in pediatrics. Dr. Pulsifer was a censor from 1926 to 1927 and again in 1929. He was commissioner of trials for the years 1930 and 1931, a councilor and a member of the Nominating Committee from 1937 to 1944, inclusive, and during 1944 was a member of the special committee that was asked to look into the possibility of better publicity for the Massachusetts Medical Society. In 1945, Dr. Pulsifer was elected vice-president of the Plymouth District Medical Society and this year was elected president of that district society, holding this important office, and by virtue of it being a vice-president of the Massachusetts Medical Society, at the time of his death.

At the request of the President, the Council stood for one minute in silent tribute to the memory of these deceased councilors.

The Secretary submitted the record of the annual meeting of the Council held on May 21, 1946, as published in the *New England Journal of Medicine*, issue of September 12, 1946, and moved its adoption. This motion was seconded by Dr. John Homans, Suffolk, and it was so ordered by vote of the Council.

REPORTS OF COMMITTEES

Executive Committee — Dr. Michael A. Tighe, Middlesex North, *secretary*.

The Secretary submitted this report, which is as follows, as published in the "Circular of Advance Information" and moved its acceptance:

The Executive Committee of the Council held its pre-Council meeting on September 4, 1946, at 4:00 p.m., at 8 Fenway, Boston. The committee processed the following committee reports.

Committee on Arrangements

The Executive Committee noted that this report contains two recommendations: that the annual meeting be held in Boston on May 20, 21 and 22, 1947, and that the meeting be increased in length from two and a half to three days.

The Executive Committee recommends that the Council adopt these recommendations.

Committee on Legislation

The Executive Committee, in recommending the acceptance of this report, notes that it is primarily one of information. It contains no recommendations.

The Executive Committee would particularly direct the attention of the Council to that part of the report which indicates that the members of the General Court are becoming increasingly co-operative with the Massachusetts Medical Society in its efforts toward maintaining high standards of medical practice in the Commonwealth. It further notes that this report gives much of the credit for this state of affairs to Mr. Charles Dunn, legislative counsel. The Executive Committee would include in this same category the chairman, the members of the committee and all those who have extended much well directed effort toward this same end.

Committee on Public Relations

The Executive Committee regards this report as largely informational. It notes, however, a few lines that are in the character of a recommendation. This recommendation would refer to the Massachusetts Hospital Association certain financial difficulties which have arisen between hospitals and insurance companies. This matter came originally to the Council's attention by means of certain

letters which the Secretary received from Dr. Shields Warren. These letters were referred to the Committee on Public Relations at the direction of the Council.

The Executive Committee recommends the adoption of the recommendation.

Subcommittee on Labor and Industry

The Executive Committee recommends the adoption of the recommendation that this subcommittee be discontinued.

Committee on Postwar Planning

The Executive Committee notes that this report contains two recommendations.

The first is that the Council create a special committee to be known as the Committee on Emergency Medical Service. In the discussion attending this subject before the Executive Committee, it came out that this matter was originally referred by the Council to the Committee on Postwar Planning. It came to the Council's attention through a letter, which had been received from Dr. Edward Bortz, requesting the formation of a committee within the Massachusetts Medical Society, which committee would be expected to collaborate with a similar committee authorized by the House of Delegates of the American Medical Association and headed by Dr. Bortz. The purpose was to study the medical resources of the country and how best to mobilize them in times of war or other disaster.

The Executive Committee noted in connection with this recommendation that the Postwar Planning Committee expressed it as its belief that, in the naming of the personnel of such a committee, attention should be paid to utilizing the experience gained in the last world war to the end that such mistakes as were made in that war might not be repeated.

It also came out in the discussion that, because the Postwar Planning Committee envisioned a time when its job would be finished whereas the work of the proposed committee might go on for many years, it would be better to handle this matter through a committee set up for this special purpose.

The Executive Committee recommends the adoption of this recommendation.

The second recommendation calls on the Council to approve of the inclusion in the program of the annual meeting in 1947 adequate discussion of some topic in medical economics.

The Executive Committee approves of this recommendation and, if adopted by the Council, recommends that the matter be referred to the Committee on Arrangements.

Committee Appointed to Make a Survey of Malpractice Insurance in Massachusetts

The Executive Committee recognizes that this report is purely informational. It speaks of the study which is being conducted by this committee and of some of the things which this study is turning up. The report offers no recommendation. The committee proposes to continue the study of this important study. It will offer its recommendations to the Council at a later date.

The Executive Committee recommends that the Council accept this report as one of progress.

Medical Advisory Committee to Regional OPA

This report is purely informational. It contains no recommendation. The Executive Committee recommends that it be accepted by the Council.

Committee Appointed to Meet with General Hawley with a View of Formulating a Program in Massachusetts for the Medical Care of Veterans and Their Dependents

This report indicates that if the Society is to co-operate with the Veterans Administration in this program, the Council must differentiate between the specialist and the nonspecialist, something the Society has never done before.

The committee seems fully aware of the seriousness of this problem and rightfully does not assume the responsibility for its solution.

The committee submits three questions to the Council, all of which must be answered if it is to proceed.

The Executive Committee recommends that the Council answer the first question "Shall such a differentiation be made?" in the affirmative.

With regard to the second question "How shall it be arrived at?" the Executive Committee notes that the committee offers two suggestions, the first of which would allow the individual doctor to state in which one of these two groups he should be placed. The Executive Committee notes that the report says that this is the method pursued by the New Jersey Medical Society.

In this connection there was read into the record of the meeting of the Executive Committee the following questionnaire which was sent to the members of the New Jersey Medical Society:

1. I agree to participate in the Veterans Medical Care Plan as arranged between the Medical Society of New Jersey and Veterans Administration.
2. I am in general practice.
3. I am doing special work in .....
4. I am confining my work entirely to .....
5. I can accommodate ..... physical examinations per month in my office.

.....M.D.

The debate on this particular suggestion indicated that it left too much latitude in the hands of the individual doctor which might, however, be somewhat offset by reason of the fact that once the individual doctor had classified himself as a specialist in a particular field he would not be permitted to see patients under this program in any other field.

The Executive Committee recommends that the Council reject the first suggestion.

The Executive Committee recommends that the second suggestion be amended by the Council so that the comma between the words "boards" and "those" be deleted and the word "and" be inserted in its place to read:

> To designate as specialists all those so certified by the specialty boards and those physicians who state that they limit their practice to a special field or who practice a specialty in an approved hospital as a member of that hospital's regular staff.

The Executive Committee recommends that the Council adopt this suggestion as amended.

In the debate leading to this action of the Executive Committee it was made clear that the Society will not be called on to designate specialists in the field of neurology or psychiatry. The debate also indicated that the Executive Committee believes that there are many individual physicians who by long practice in a special field have fully qualified themselves as specialists in that field even though they have for one reason or another never qualified before a specialty board. It was observed that there were those who might not see much difference between the first suggestion and that part of the second which allows a man to qualify by stating that he limits his practice to a specialty.

In this connection it was pointed out that, in the first, the doctor himself, without further qualification, says in which group he should be placed, while in the second he is asked to state the circumstance of his practice, his classification being made on this as a statement of fact. It was further explained that this qualification was included in the second so as to permit that individual to qualify as a specialist who, while devoting himself exclusively to a special field, was not a member of the staff of an approved hospital.

It was the general feeling in the Executive Committee that, if the Massachusetts Medical Society were to designate any physician as a specialist, it must have control of the circumstance under which such a designation would be made.

The Executive Committee believes that in the second suggestion such controls exist. There was no disposition in the Executive Committee to regard the controls set up in the second as perfect. They were the best that could be thought of at the moment. Time and experience might indicate the necessity of their modification at some future time.

It was explained by Dr. McCarthy, chairman of the committee having this matter in hand, that if the Council accepted these or other proposals this committee would

issue a questionnaire to every member of the Society based on the wishes of the Council.

It was pointed out that this questionnaire would go only to members of the Society; not because there was any desire to exclude others from this program but because there was no other list of physicians available.

The Executive Committee next turned its attention to the third question which the committee propounded: "What formula shall be used whereby the fees paid to the specialist shall be differentiated from those paid to the general practitioner?" The suggestion of the committee presenting this report is that the schedule of fees adopted by the Council on April 10, 1946, be regarded as specialists' fees and that when the services called for in this schedule are rendered by general practitioners, the compensation shall be 20 per cent less than that set forth in the schedule.

The Executive Committee recommends that the Council adopt this formula. The Executive Committee notes that the committee asks for a leeway not to exceed 5 per cent, so the fees finally set down for the general practitioner may appear in round numbers.

The Executive Committee also recommends that the Council adopt this proposal.

The report speaks of the action of the Council on April 10, 1946, whereby the Blue Shield was designated as the administrative agent for this veterans' medical-care plan in Massachusetts. The committee now recommends that this action be rescinded.

It was explained that the Medical Service Administration of New Jersey operated a medical-care plan for the veterans identical with that adopted by the Council on April 10 and that New Jersey's experience with this plan was rather distressing.

This experience can best be stated by reading into this record a letter received from Dr. Norman M. Scott, medical director of the New Jersey plan, by the Secretary:

July 25, 1946

Dear Dr. Tighe:

This will acknowledge receipt of your letter dated July 15 relative to care of the veteran.

I almost hesitate to write of our experience for fear of being misunderstood.

The Medical Society of New Jersey, and the physicians of New Jersey as a whole, are anxious to fulfill any obligation they have toward the veteran in the care of his service connected disabilities. The problem reduces itself to definition of the obligation of the profession and the means of fulfilling this obligation.

The Society has organized two nonprofit medical-service corporations: Medical Service Administration of New Jersey and Medical-Surgical Plan of New Jersey.

You are probably acquainted with Medical-Surgical Plan. It operates on the prepayment insurance basis, providing benefits for services of private physicians rendered its subscribers who are admitted to hospital for treatment. It is similar to Massachusetts Medical Service.

Medical Service Administration deals with problems of the indigent and low-income group, and plans which co-operate with local and federal government agencies, such as the Farm Security Administration Medical Plan and the City of Newark Medical Plan, for care of the indigent and medically indigent of the city. It is a small administrative organization. It appeared to be the logical agency in New Jersey to deal with the veteran's problem. In fact we could not use our larger organization, Medical-Surgical Plan, because of the chance of jeopardizing the subscription funds of our subscribers.

In February, 1946, Medical Service Administration entered into what we considered a very simple contract with V. A. We agreed that all authorizations for medical care of the veteran would be issued through our office, that physicians' reports would be returned through our office and that we would bill the V. A. at intervals for authorized services rendered. We had special agreements with our 3000 physicians to render the services and a fee schedule acceptable to the majority of physicians. The Society advanced us $10,000 to place the plan in operation.

We operated the plan until May 15, 1946. Some of our difficulties were as follows:

1. The load was heavier than we had anticipated. We processed an average of 300 claims a day. The return of reports from physicians rose as high as 548 on one day. The recording of all these details in our records required a lot of detail clerical work. For instance it took the time of two clerks to open and sort the mail. Telephone messages from physicians and veterans were very heavy.

2. We developed a force of twelve typists and one male executive assistant. It is difficult to train girls to do this work and to acquaint them with such subjects as medical nomenclature and methods of properly posting medical records. These twelve girls were able to handle 300 cases a day plus the incoming reports. These 300 cases were mostly treatment cases. In addition we processed about 50 physical examination cases a day, averaging 3 examinations per case. We never were able to process the full number of physical examination cases referred to us, and on May 15 had a backlog of about 1000 physical examination cases unprocessed.

3. As an example, one type of treatment case proved very difficult to administer. A physician in a small town would request, let us say, eight office visits, a gastrointestinal x-ray series, blood chemical studies and a gastric analysis, or a group of similar diagnostic services, in a case under his care. The authorization would be issued to us in the name of the doctor in the small town, who had no facilities for rendering such services. V. A. insisted that all such authorizations be billed them as one authorization and that any part of the authorization not included in our billing be canceled. This meant that we had to issue the authorization to the small town physician, have him refer the case to a proper consultant, obtain the reports of consultants and include them with his report at the end of the month. We would then bill V. A. and pay the general practitioner for all services, and he in turn would pay the consultants. Physicians do not like this method; it is not within the framework of private medical practice. Or, we could split up the authorization in this office and distribute it to the various consultants with a notice that they return their reports to us and a copy to the general practitioner. We would then wait until all reports contained in the authorization were received in this office so we could bill V. A. under one item. The trouble with this method was that the veteran would not report for certain of the examinations or the consultant would neglect to render his report promptly and we would have to follow it up by letter, or if we did bill V. A. for the reports received and later the consultant rendered a report, it would not be payable as the authorization had been terminated and the item closed in the V. A. finance department when the first reports were received. It is complications such as these which give administrators gray hairs.

4. We had trouble finding sufficient office space and finally wound up with offices in three different buildings in the city.

I have outlined above a few of our difficulties. These are administrative difficulties which could have been overcome in time and were not the main reason for changing our contract.

In operating the plan we simply received authorizations from the Regional Office and retyped these authorizations on our own forms and forwarded them to the physicians designated in the authorizations. This applied to treatment authorizations. The physical examination authorizations bore no physician's name and the examinations were delegated by us to a general practitioner or specialist capable of performing the examination requested. In other words, we were a fifth wheel which delayed rather than expedited the rendering of care to the veteran. We had no control over the volume, the type of care rendered or the standards of medical care except to determine that the services were rendered by fully licensed physicians. We were just repeating work already done by the Regional Office.

Billing the V. A. was a formidable effort. They must be billed in each case according to claim number of the veteran, his name, date of the authorization, date of each service, each item of service, cost of each service and total. This makes a long voucher especially when done without proper equipment. Our largest voucher, covering a period of two weeks, was 91 pages long. These vouchers are inspected and compared with the authorizations, item by item, in the medical division of the V. A. Regional Office. The inspection of the 91 page voucher mentioned above consumed about eighteen days. When approved by the medical division the vouchers are forwarded to the finance division, where the inspection is repeated by comparison with the copies of authorizations retained by the finance officer. Vouchers then go to the procurement division and finally are forwarded to the Treasury Department in New York for payment. The result is a delay in payment. We have been paid on one voucher, covering physicians' reports received between March 15 and 30, totaling about $700, of which our administrative allotment was $53. This is our total income to date, although we must still maintain and support a skeleton organization to complete this work, at the expense of the Society. Our outstanding vouchers have a value of about $75,000, which we know will eventually be paid, of which our administrative allotment is about $5,500.

To have continued the plan would have cost the Society many thousands of dollars which we did not feel was warranted, even though we thought there was a fair chance of being able to reimburse it at least in part.

I think there is an advantage in having a recognized agency of each state society involved in the administration of the plan. Many of the men have expressed the opinion that they would rather deal through our office than directly with the Regional Office and that they liked our administrative procedure better. It is apparently working satisfactorily in Michigan, through Michigan Medical Service, and in California, through California Physicians' Service. They are both large organizations with complete modern accounting facilities and with sufficient trained personnel to absorb the load. The setup of Massachusetts Medical Service under the able administration of Mr. Cahalane and Dr. Hayden should be able to do a much better job than we did. The men in Massachusetts would perhaps prefer to work through them than directly with V.A., but I still feel the work of Massachusetts Medical Service would be almost entirely limited to that of a distributing agency for V.A.

This brings me back to a definition of the obligation of the profession to the veteran. It seems to me that, if the majority of physicians agree to render service to the veteran at fees agreed on by the majority and participate conscientiously in the program, we have fulfilled our obligation. It should not be necessary for the profession to assume responsibility for administrative matters. V.A. does, however, need our administrative assistance and advice. On this promise we changed our contract. I am enclosing a copy of the new contract and the preliminary edition of an article just dictated to appear in our August journal.

It is all a new problem, a difficult problem for both V.A. and the profession. Difficult administrative problems will arise and continue to arise until the best solution of the entire problem is evolved. We are much interested in the problem and will be interested in the solution promoted by your society.

Yours very truly,

[Signed] NORMAN M. SCOTT
NORMAN M. SCOTT, M.D.
Medical Director

Also read into this record are the salient points of the new contract entered into by the Medical Service Administration of New Jersey with the Veterans Administration. These are as follows:

The new contract provides that Medical Service Administration will engage one or more competent medical representatives to be stationed at and operate from the Veterans Administration Regional Office.

The functions of this medical representative (or representatives) in brief shall be: (1) To certify a list of competent physicians throughout the State to render examinations and treatments to veterans. (2) To review the work of these physicians to the end that examinations and treatments are adequate, satisfactory and in accordance with established standards. (3) To make such investigations as Veterans Administration may request concerning complaints, deficiencies or inadequacies of reports made by examiners and to submit reports and recommendations thereon to Veterans Administration and Medical Service Administration. (4) To serve as liaison officer between Veterans Administration and Medical Service Administration but not as a supervisor of Veterans Administration activities or employees.

Veterans Administration will provide office space, equipment, clerical assistance and telephone service.

Veterans Administration will pay Medical Service Administration $10,000 a year, payable quarterly in arrears, but the amounts so paid shall not exceed the amounts expended or incurred by Medical Service Administration.

The following comments made by New Jersey on this new plan were likewise read into the record:

Under the new plan authorizations for examinations and treatments will be issued directly from the Regional Office of Veterans Administration to the physician. The list of over 3000 participating physicians, in accordance with their type of practice, maintained under the previous plan will be continued. The fees paid physicians will remain the same as under the previous plan.

The new plan we believe will prove much more satisfactory than the first plan. It should expedite the medical care of the veteran and protect the interest of the private practitioner of medicine.

It must, however, be remembered that the administrative phase in providing medical care of service-connected disabilities among the 600,000 veterans of New Jersey by private physicians is a formidable problem. It is a new problem for both the profession and Veterans Administration, and that difficult administrative problems will arise and must continue to arise until a satisfactory solution for the entire problem is evolved. It is the sincere hope of Medical Service Administration that the problem will be satisfactorily met by the voluntary co-operation of the profession.

The committee in charge of this work looks upon the new contract which New Jersey has entered into as a modification of the Kansas Plan, which was fully explained at the meeting of the Council on April 10, 1946.

It now recommends that the Council approve the Kansas Plan so modified as to provide that the Blue Shield shall act as the liaison between the Veterans Administration and the physicians rendering this service in Massachusetts.

The Executive Committee recommends that the Council rescind its action of April 10, 1946, as previously outlined.

With regard to the second recommendation of the committee, the Executive Committee inquired whether or not the Blue Shield had been consulted in this matter. The chairman of the committee in charge of this work replied that it had and that it was in accord with the recommendation. The Secretary expressed the thought that, if the accord was in writing, it would clear the air and obviate the necessity of considerable debate before the Council.

In this connection the following letter was received:

MASSACHUSETTS MEDICAL SERVICE

September 18, 1946

Dwight O'Hara, M.D., President
Massachusetts Medical Society
8 Fenway
Boston, Massachusetts

Dear Doctor O'Hara:

In order that the Massachusetts Medical Society may be officially aware of the attitude of the Blue Shield Board of Directors relative to the Veterans Administration's proposed medical-care program, there are quoted below excerpts from minutes of meetings of the Blue Shield Board of Directors, at which this matter was considered.

January 9, 1946 — "Dr. Humphrey L. McCarthy presented to the Board a detailed explanation of the plans of the Veterans Administration for the care of veterans of World War II and discussed various plans under which the corporation might render assistance and participate in providing medical care for such veterans. It was the opinion of the directors that the corporation should co-operate with the Veterans Administration in every possible way provided that the financial stability of the corporation was not affected thereby."

April 10, 1946 — "*Voted* that Dr. Hayden, the medical director, and Mr. Twomey, the attorney for the corporation be authorized to negotiate a contract with the Veterans Administration for the furnishing of medical and surgical service to disabled veterans and that Dr. Hayden, the Medical Director, be authorized to execute such contract on behalf of the corporation.

Respectfully,

[Signed] CHARLES G. HAYDEN
CHARLES G. HAYDEN, M.D.
Medical Director

The Executive Committee took no action on this recommendation pending the Council's action on the committee's first recommendation. The disposition of the Executive Committee, however, seemed favorable to this second recommendation provided the first recommendation was adopted by the Council and provided the Blue Shield was favorably disposed toward it.

Committee to Study the Revision of the Salaries of the Employees of the Society

The Executive Committee recommends that the Council adopt this report and the recommendations contained in it.

Committee on Finance

The Executive Committee notes that this report approves the recommendations called for in the previous report. It also approves of an additional appropriation of $900 to cover the expenses of our representatives to the meeting of the House of Delegates of the American Medical Association to be held in Chicago in December, 1946. It was explained that this item was not covered in the annual budget because at that time there was no knowledge that such meeting of the House of Delegates of the American Medical Association was to be held.

The Executive Committee recommends that the Council adopt the recommendations contained in the report.

Committee on Postgraduate Assembly

In connection with this report the Executive Committee in a special manner directs the Council's attention to an implication which might be read in certain lines, namely, that monies taken in by the Society in a manner indicated in the report may be earmarked with regard to their expenditure. The Executive Committee points out that this may not be done. In support of this view, it quotes Chapter VI, Section 5, of the by-laws.

The Executive Committee recommends the acceptance of this report provided the provisions of Chapter VI, Section 5, are strictly adhered to.

Committee to Meet with the Massachusetts Hospital Association

This is an informational report. The Executive Committee recommends its acceptance.

Report of the Massachusetts Representatives to the House of Delegates of the American Medical Association

This report, which was prepared by Dr. D. Scannell, is informational. It is exceptionally well done. The Executive Committee recommends that the members of the Council read it carefully.

COMMUNICATIONS

The Executive Committee notes that the first two of these communications deal with the same subject. The John Hancock Mutual Life Insurance Company and the Liberty Mutual Insurance Company join in a request that the Massachusetts Medical Society set up a committee for the purpose of passing on the merits of individual sickness-insurance plans as offered by old-line insurance companies.

These letters indicate that the inspiration, which directed them to be sent at this time to the President, rose out of the policy adopted by the House of Delegates of the American Medical Association at its San Francisco meeting. This policy had to do with a change of name whereby the Council on Medical Service and Public Relations is to be henceforth known as the Council on Medical Service and its function limited to a study of all types of insurance whose purpose is to meet the medical-care costs of sickness. This council will give its approval to any plan for this purpose which meets the standards which it will set and provided that the plan in question is first approved by a constituent state medical society.

The debate in the Executive Committee seemed to indicate that, although the Society through the Blue Shield is committed to insurance based on the medical-service principle as the best way to meet the medical-care costs of the low-income group, and, although it should continue to emphasize this principle, it should not assume opposition to other methods of insurance by means of which these costs might be met.

It was pointed out that, if success was to crown the Society's efforts in the continued fight against the federal control of medicine, it should join forces with all those who think as it does and whose goal is the same even though the paths by which that goal is reached may in some respects differ.

With such thoughts in mind, the Executive Committee recommends that these communications be referred to the Committee on Public Relations, with the suggestion that a subcommittee be set up by that committee for the purpose of the study outlined in them.

MICHAEL A. TIGHE, M.D., *Secretary*

The motion to accept this report was seconded by Dr. Walter G. Phippen, Essex South, and it was so ordered by vote of the Council.

Committee on Arrangements — Dr. Sidney C. Wiggin, Suffolk, *chairman.*

This report, which is as follows, was submitted by the Chairman:

A meeting of the Committee on Arrangements was held on June 28, 1946. It was voted by the committee that it recommend to the Council that the annual meeting should be held in Boston on May 20, 21 and 22. Space has been reserved at the Hotel Statler for the meeting for these days.

It was also voted to recommend to the Council that the meeting be increased in length from two and a half to three days.

Dr. Wiggin moved its acceptance. This motion was seconded by a councilor, and it was so ordered by vote of the Council.

The President called attention to the fact that this report contained two recommendations and announced that the Executive Committee had approved both of them. Dr. John J. Curley, Worcester North, moved the adoption of the recommendations. This motion was seconded by Dr. David Cheever, Suffolk, and it was so ordered by vote of the Council.

Committee on Legislation — Dr. David L. Belding, Norfolk South, *chairman.*

This report (Appendix No. 2) was submitted by the Secretary in the absence of the chairman.

Dr. John J. Curley moved the acceptance of the report. This motion was seconded by Dr. Carl Bearse, Norfolk, and it was so ordered by vote of the Council.

Committee on Public Relations — Dr. Albert A. Hornor, Suffolk, *secretary.*

This report (Appendix No. 3) was submitted by Dr. Hornor.

The President called attention to the fact that this report contained one recommendation, namely, that certain financial difficulties which certain hospitals were having with insurance companies be referred to the Massachusetts Hospital Association as the agency more particularly concerned in this matter. Dr. Hornor moved the acceptance of the report and the adoption of the recommendation. This motion was seconded by Dr. James V. McHugh, Worcester North.

Dr. P. R. Withington, Norfolk, expressed the thought that the doctor did have a concern in this matter inasmuch as the doctor needed the hospital quite as much as the hospital needed the doctor.

The President pointed out that this matter was fully discussed in the Committee on Public Relations and that, inasmuch as the committee was not aware of the details of this controversy, it would be much better to refer the matter to the Massachusetts Hospital Association as the organization most fitted to deal with it. The President added that the Executive Committee had approved of the recommendation. This motion was adopted by vote of the Council.

Subcommittee on Labor and Industry — Dr. Daniel B. Reardon, Norfolk South, *chairman.*

The report, which was offered by the chairman, is as follows:

I have felt for some time that the Subcommittee on Labor and Industry had fulfilled its obligations and I can see no reason why it should be continued. Therefore, I recommend that this subcommittee be discontinued.

Dr. McHugh moved the acceptance of the report and the adoption of the recommendation. This motion was seconded by Dr. Phippen, and it was so ordered by vote of the Council.

Committee on Postwar Planning — Dr. Howard F. Root, Suffolk, *chairman.*

This report, which is as follows, was presented by Dr. Root:

The president of the Society sent to the chairman of the Postwar Planning Committee a communication from the headquarters of the American Medical Association in June regarding the formation of a committee designed to consider the utilization of medical services in any future national emergency. The chairman of this committee is Dr. Edward Bortz, of Philadelphia. A consideration of this matter was turned over to the Subcommittee on Veterans Affairs, and as a result of their report, the committee believes that the Council should take some action in relation to this important affair. A letter from the chairman of the national committee, Dr. Bortz, states that one objective of this committee is to secure from all medical officers who served in World War II a statement regarding their assignment. The committee recommends that the Council direct the President to appoint a Committee on National Emergency Medical Service and to include in its membership sufficient representation of those with special experience in the last world war.

The committee considered reports from the American Medical Association meeting at San Francisco, and particularly the increasing importance of certain economic and legal aspects of modern medicine. The committee recommends that the Council approve the inclusion in the program for the annual meeting in 1947 adequate discussion of some topic in medical economics.

The program for postgraduate instruction in various centers in the Commonwealth has been prepared and will be carried out with the co-operation of local committees through the fall and winter.

Dr. Root submitted a supplementary report, which was informational only and concerned itself with a suggested plan whereby a postgraduate clinical program to be held in the Boston hospitals might be combined with the annual meeting. He added that the details of the plan, which were still in the discussive stage, would be reported on later when and if they matured.

Dr. Root moved the acceptance of the report. The motion was seconded, and it was so ordered by vote of the Council.

The President announced that this report contained two recommendations: first, that the Council direct the President to appoint a Committee on National Emergency Medical Service and to include in its membership sufficient representation of those with special experience in the last war, and secondly, that the Council approve of the inclusion in the program of the annual meeting in 1947 adequate discussion of some topic in medical economics. The President added that both these recommendations had been approved by the Executive Committee.

The first recommendation was adopted by vote of the Council on a motion by Dr. Curley, seconded by Dr. Phippen.

Dr. Root moved the adoption of the second recommendation. This motion was seconded by Dr. Curley, and it was so ordered by vote of the Council.

Dr. Root moved the adoption of the report as a whole. This motion was seconded by Dr. Phippen, and it was so ordered by vote of the Council.

Committee to Make a Survey of Malpractice Insurance in Massachusetts — Dr. Carl Bearse, Norfolk, *chairman.*

This report (Appendix No. 4) was presented by the chairman. He said that it was purely informational and that, as the subject was still under investigation, no recommendations were being offered at that time.

He moved the acceptance of the report as one of progress. The motion was seconded by a councilor, and it was so ordered by vote of the Council.

Medical Advisory Committee to the Regional OPA — Dr. Joseph Garland, Suffolk, *chairman.*

This report, which is as follows, was offered by the chairman:

> The Medical Advisory Committee to the Regional OPA has met only once this year, on May 9, 1946. The main purpose of this meeting was to discuss the problems of various hospitals that had requested extra sugar. The question was referred to the Hospital Council of Boston for its advice, the result apparently being that this matter was left to the discretion of the committee.
>
> Occasional applications for extra sugar rations for individuals have been referred to members of the committee, but otherwise its functions seem to be nearly over.
>
> This report is offered for the information of the Council.

Dr. Garland moved its acceptance. This motion was seconded by Dr. Phippen, and it was so ordered by vote of the Council.

Report of the Committee to Meet with General Hawley with the View of Formulating a Program in Massachusetts for the Medical Care of Veterans and Their Dependents — Dr. Humphrey L. McCarthy, Norfolk, *chairman.*

This report (Appendix No. 5) was presented by the chairman, who moved its acceptance. The motion was seconded by a councilor, and it was so ordered by vote of the Council.

The President called the attention of the Council to that part of the report which says that for the purposes of this program it is mandatory that the Council distinguish between the specialist and nonspecialist. In this connection, he added, the Committee had posed three questions: (1) Shall such a differentiation be made? (2) If so, how shall it be arrived at? (3) What formula shall be used whereby the fees paid the specialist shall be differentiated from those paid to the general practitioner?

The President said that the Executive Committee recommended that the first question be answered in the affirmative.

A councilor moved that this differentiation be made. This motion was seconded.

Dr. George L. Schadt, Hampden, asked the President if he would care to define the term "general practitioner." The President, while declining to answer this question, said that the Council might be able to arrive at the answer when it came to consider the suggestions which appeared later in this report.

Dr. Hornor asked if legally the Council had any right to make such a differentiation. The President replied that any differentiation of the kind which the Council might make would have no standing under the law, that it was not intended that it should have, and that its sole purpose was to facilitate our program with the Veterans Administration.

Dr. Carl Bearse said that he could not help but feel that the Council should hesitate before setting up such a differentiation. "Our method of practice," he continued, "has worked well in the past and it should work well in the future, even in so far as veterans are concerned."

On the invitation of the President, Dr. McCarthy said that this differentiation was called for by the Veterans Administration and that it would have to be arrived at if the Society were to participate in the program. This motion was carried by vote of the Council.

The President said that the next question before the Council concerned itself with how this differentiation could be arrived at. In this connection, he added that the committee offered two suggestions: first, that a suitable questionnaire be submitted to each member of the Society asking him to designate in which one of the two groups he believes he should be placed; second, to designate as specialists all those so certified by the specialty boards and those physicians who state that they limit their practice to a special field or who practice a specialty in an approved hospital as a member of that hospital's regular staff. The President said that the Executive Committee recommends that the Council approve the second suggestion.

Dr. Richard M. Smith, Suffolk, moved the adoption of the recommendation of the Executive Committee. The motion was seconded by a councilor.

At this point in the proceedings, a discussion arose concerning the significance of the word "designate" as it appeared in the second suggestion. This discussion was participated in by Drs. Fremont-Smith, Suffolk, and Baty, Middlesex South. The latter thought the word "define" should more properly be used. The former said that whatever language was adopted should make it clear that this step was taken for the purpose only of the Veterans Administration.

Dr. Fremont-Smith moved as an amendment to the motion to adopt the recommendation of the Executive Committee that this recommendation be adopted subject to the insertion after the word "specialists," the words "for the purpose of the Veterans Administration only." This amendment was seconded by a councilor.

Dr. Allan Butler, Suffolk, further amended the motion so as to provide that the word "define" be substituted for the word "designate." This amendment was likewise seconded by a councilor.

Dr. Schadt asked if, after certain members were defined as specialists, those remaining were to be classified as general practitioners. The President answered in the affirmative.

The motion as amended by Dr. Fremont-Smith and Dr. Butler was adopted by vote of the Council.

The President said that the next matter before the Council was concerned with the third question submitted by the committee. He added that the committee suggested the following formula whereby the fees paid specialists might be distinguished from those paid the general practitioner:

> The schedule of fees approved by the Council on April 10, 1946, shall be regarded as specialists' fees, and when the services called for in this schedule are rendered by the general practitioner, the compensation shall be 20 per cent less than that set forth in that schedule, with the understanding that if such a formula were adopted the committee be allowed a leeway not to exceed 5 per cent so that the fees finally set forth in the schedule shall appear in round numbers.

Dr. Bagnall was recognized by the Chair. He spoke as follows:

> So far as the fees are concerned, I should like to remind you that in April you adopted a fee schedule for Blue Shield to run this scheme, when it was finally adopted. I think it is fair to say that not many of you felt that the schedule of fees that was adopted was a schedule of fees that was reasonable. Due, perhaps in part at least, to the tremendous energy of the chairman of that committee, the schedule was adopted, and I had the pleasure of casting the only dissenting vote. But afterward I talked with a great many men, and I have not found but one since who thought that it was a fair fee schedule.
>
> Now you come to the point of reducing that fee schedule by 20 per cent, which shows that the committee believes that the original fee schedule was not fair.
>
> We could refer this schedule back to the committee, with the idea that they should make whatever adjustment the Veterans Bureau feels desirable, if it seems reasonable in the committee's point of view and if it feels that they are not letting the Society or the Council down.
>
> It would be too big a job for the Council to go into the matter of fees again. The idea of dropping them 20 per cent for general practitioners seems fair enough. I have not gone over the schedule on the basis of the 20 per cent reduction. I should prefer to leave it to the committee to iron out with the Veterans Administration on a basis that was mutually satisfactory.

Dr. McCarthy moved the adoption of the suggestion offered by the committee. This motion was seconded by a councilor.

The President said that the Executive Committee approved the adoption of this suggestion. The motion was adopted by vote of the Council.

At that point, the Council went into executive session, from which it arose half an hour later.

The President said that the next matter before the Council was the recommendation of the committee that the Council rescind its action of April 10, 1946, whereby it was recommended that the Blue Shield be named the administrative agency in Massachusetts for the plan which concerned itself with the medical care by the civilian doctors of those for whom the Veterans Administration is responsible. The Council proceeded to discuss the matter informally.

Dr. Fremont-Smith asked that a statement be made to the Council outlining the advantages and disadvantages of having the Veterans Administration set up its own administration in this state, and a further statement that would likewise outline the advantages and disadvantages of the Blue Shield's taking over the administration of this program. The President called Dr. Smith's attention to the fact that the "Circular of Advance Information" told the story rather completely.

Dr. Donald Munro, Suffolk, said that it was not entirely clear to him as to what the function of Blue Shield would be when and if it took over this administration. He asked if it would have any control of the fee schedule. He added that, as the result of what Dr. Bagnall had said earlier in the meeting, there might be some question whether or not the Blue Shield, if they took over this administration, might want to reduce the fee schedule to the level of its own schedule. Dr. Bagnall replied that he had no such thought in mind.

The President said that it was apparent that the committee made the recommendation because of the hopeless state that New Jersey got into in its attempt to administer a plan of this kind. He quoted Dr. Bagnall as saying that in spite of New Jersey's difficulties the latter was of the belief that the Blue Shield could and would like to administer the plan in Massachusetts. He emphasized the fact that the Blue Shield had nothing to do with the fee schedule set up by the Council to cover medical services rendered under this program.

Dr. Phippen said that it seemed clear to him that the Blue Shield was perfectly willing to go ahead with this proposition and because it was geared to handle the care of sick individuals on an insurance basis the Council would be well advised to let them handle this veterans' plan.

Dr. McCarthy said that at the meeting of the Executive Committee he was instructed to ascertain in writing the views of the Blue Shield in this matter, as mentioned in the report of the Executive Committee. He added that he had complied with this directive and that the letter which appeared in the report of the Executive Committee was the answer received. When he had heard of the difficulty in New Jersey, he continued, both he and Dr. Tighe wrote to New Jersey and at the same time informed the Blue Shield of the difficulties in that area. He said that this recommendation in the report was inspired out of a sense of caution.

Dr. Bagnall said that during the last three days of the current week the Blue Shield people all over the country planned to hold a meeting for the discussion of this subject and that undoubtedly much information on it would become available.

Dr. Munro said that the Council seemed to be getting nowhere rapidly. He moved that this subject be laid on the table to be withdrawn when more information with regard to it is available. This motion was seconded, and it was so ordered by vote of the Council.

The order of the day was moved. The motion was seconded and it was so ordered by vote of the Council.

Committee Appointed to Study Revision of the Salaries of the Employees of the Society — Dr. Charles J. Kickham, Norfolk, *chairman.*

In the absence of the Chairman, this report (Appendix No. 6) was presented by the President, who said that it called for an extra appropriation of $1,332 for the purposes outlined in the report. He added that this appropriation had been approved by the Executive Committee.

Dr. Lester M. Felton, Worcester, moved that the report be accepted and the recommendations contained in it adopted. The motion was seconded by a councilor. It was so ordered by vote of the Council.

Committee on Finance — Dr. Robert W. Buck, Middlesex South, *chairman.*

This report, which is as follows, was presented by the chairman:

> The Committee on Finance has unanimously approved the salary increases as recommended by the special committee appointed to study this subject, such increases requiring an extraordinary appropriation in the amount of $1,332 for the period from July 1, 1946, to December 31, 1946.

The following correspondence was submitted by the committee as a supplementary report:

August 24, 1946

Dr. Robert W Buck, Chairman
Committee on Finance
5 Bay State Road
Boston 15, Massachusetts

Dear Dr. Buck:

Dr. Tighe has called my attention to the fact that there is to be a meeting of the House of Delegates in Chicago in December of this year.

This is, of course, an item which was not anticipated at the time the budget for 1946 was passed upon. It would, therefore, seem to me wise for the Committee on Finance to recommend to the Council that an extraordinary appropriation of $500 be made to cover the expenses of the Massachusetts delegates to this meeting.

If you and your committee approve of making this request, I think a line from you to that effect would be all that is necessary. If possible, this should be in the Secretary's hands on or before next Wednesday, August 28, so that it may be mimeographed and added to the business for the October meeting.

Thanking you for consideration of this matter, I am

Sincerely yours,

[Signed] DWIGHT O'HARA

DWIGHT O'HARA, M.D., *President*

August 26, 1946

Dr. Michael A. Tighe, Secretary
The Massachusetts Medical Society
8 Fenway
Boston 15, Massachusetts

Dear Dr. Tighe:

Dr. O'Hara has asked that the Committee on Finance recommend to the Council that an extraordinary appropriation of $500 be made to cover the expenses of the Massachusetts delegates to the December meeting of the House of Delegates in Chicago.

On behalf of the Committee on Finance I recommend this appropriation, although owing to the shortness of time not all of the members of the committee have yet been able to express their approval. When this approval is obtained, it will be forwarded to you.

Very truly yours,

[Signed] ROBERT W. BUCK

ROBERT W. BUCK, M.D.
Chairman, Committee on Finance

September 4 1946

Dr. Michael A. Tighe, Secretary
The Massachusetts Medical Society
8 Fenway
Boston 15, Massachusetts

Dear Dr. Tighe:

I have received the unanimous approval of the Committee on Finance of the extraordinary appropriation of $500 to cover the expenses of the Massachusetts delegates to the December meeting of the House of Delegates in Chicago.

Sincerely yours,

[Signed] ROBERT W. BUCK
Chairman, Committee on Finance

Dr. McCarthy moved the adoption of the report. This motion was seconded by a councilor, and it was so ordered by vote of the Council.

Committee on Postgraduate Assembly — Dr. Leroy E. Parkins, Suffolk, *chairman.*

The report, which was offered by the chairman, is as follows:

> The committee has joined with representatives of the other New England state medical societies to form an executive committee, which has appointed a program and other committees necessary to carry out the work of arranging the assembly. The program will be published in the *New England Journal of Medicine*, issue of September 12, 1946. All the speakers are distinguished members of the profession.
>
> The symposium to be presented on the medical care of veterans in the Anglo-Saxon countries is of timely interest and importance.
>
> On vote of the Executive Committee it was decided to hold the assembly in a hotel; also it was voted to have technical exhibits to help pay expenses for this assembly and provide funds to organize a better program for next year.

Dr. Parkins moved the adoption of the report provided that the following language appearing at the end of the report be deleted: "and provide funds to organize a better program for next year." He said that this deletion would bring the report into conformity with the views of the Executive Committee, the latter having recommended that the report be adopted, provided Chapter VI, Section 5, of the by-laws be strictly adhered to. Dr. Parkins's motion was seconded by a councilor, and it was so ordered by vote of the Council.

Committee Appointed to Confer with the Massachusetts Hospital Association — Dr. Walter G. Phippen, Essex South, *chairman.*

The report, which was offered by the chairman, is as follows:

> The material pertaining to the Gallupe Plan for furthering the usefulness of graduates of substandard schools in hospitals was sent to every hospital in the Commonwealth, together with the remarks made on this subject at the annual meeting of the Society. Otherwise there has been no activity of this committee.

The President said that this was a report of progress. It was moved that it be accepted as such. This motion was seconded, and it was so ordered by vote of the Council.

Report of the Massachusetts Representatives to the House of Delegates of the American Medical Association — Dr. David D. Scannell, Norfolk.

This report (Appendix No. 7) was submitted by the President in Dr. Scannell's absence, who commented on the thorough manner in which the report had been prepared.

The Secretary said that Dr. Scannell had been appointed by the speaker of the House of Delegates of the American Medical Association to a committee which had already met to study the report of Rich and Associates, with a view of presenting an analysis of it to the House of Delegates when it meets in December. He explained that at the direction of the Board of Trustees, this firm had been employed to conduct a survey as to how the public relations of the American Medical Association might be improved.

Dr. Scannell's report was accepted by vote of the Council.

Communications

The following letters to the President, each dealing with the same subject, were presented:

John Hancock Mutual Life Insurance Company
Home Office, Boston, Massachusetts
August 7, 1946

Dr. Dwight O'Hara, President
Massachusetts Medical Society
8 Fenway, Boston, Massachusetts

Dear Dr. O'Hara:

Our company has for three quarters of a century had a sincere interest in the health and welfare of the people of this country. By providing, through insurance, a medium for sharing certain risks to which all men are liable but which fall unevenly on a few, we believe that we have contributed to general social stability and the improvement of our way of life.

At its recent convention in San Francisco, we believe that the American Medical Association confirmed the opinion, already held by a large proportion of the profession, that, in order to accomplish the desired protection of the public in the most rapid and efficient manner, the doctors should co-operate with all reputable types of health insurance. Two approaches were outlined for determining the standards of such insurance, in so far as they relate to the practice of medicine: one, a joint advisory body to be set up by the American Medical Association to study the problems inherent in this risk; and the other, an implied recommendation to the state societies to set up the machinery for passing on the merits of individual plans, and the reciprocal responsibilities of the doctor and the insurance carrier which they involve. Our company desires to co-operate with the doctors in both these procedures.

It is our opinion that the pre-eminent position of the Massachusetts Medical Society in the councils of the profession makes it the logical leader in this field. It would give our company great satisfaction if your society would join with us in undertaking this public duty. While we cannot speak officially for any of the other insurance companies, we have reason to believe that such a move by your society would be welcomed by them, and that they too would be happy to participate in the work.

We believe that the public would appreciate this constructive action.

Very truly yours,
[Signed] H. Maynard Rees, M.D.
H. Maynard Rees, M.D., *Director*
Medical Service Insurance

Liberty Mutual Insurance Company
175 Berkeley Street, Boston, Massachusetts
August 7, 1946

Dr. Dwight O'Hara, President
Massachusetts Medical Society
8 Fenway, Boston, Massachusetts

Dear Dr. O'Hara:

We have followed closely the hearings before the Senate Committee on Education and Labor on the National Health Act of 1945. We have also been much interested in the recent proceedings of the House of Delegates of the American Medical Association at San Francisco.

We gather that the American Medical Association has not weakened in its opposition to compulsory health insurance, but recognizes, meanwhile, that something more must be done than to oppose legislation regarded as undesirable. We understand the Association is thoroughly alive to the necessity for pushing voluntary plans for prepayment insurance to cover surgical and hospital expenses and, convinced that a large enrollment in voluntary plans is essential, will not give exclusive support to any one type of plan, but will approve any plan which meets its requirements.

This action by the House of Delegates is constructive but should be implemented by action by the state societies, since the national organization will act only on plans already approved at the local level. The Massachusetts Medical Society has attained a pre-eminent position among groups of doctors and has a record for achievements in the public interest. Therefore, it would be most significant if your organization would take a position of leadership in this field comparable to what it has accomplished in other areas.

The problem demanding solution is: how to provide enough people with prepaid surgical, hospital and medical-care insurance at a sufficiently moderate price to meet the demand of the public for coverage without the necessity for Government operation in this field. It will not meet the problem merely to point out that certain plans are available; it will be necessary to take definite, constructive action to design solutions that meet the needs of the people in terms of the coverage furnished and the number of people protected.

In our opinion the need of the public can be met, within the frame of the competitive enterprise system, by co-operation between the doctors, employers and existing insurance facilities. The employer should be included in the formula because it is essential to have administrative supervision, improved industrial hygiene, practical provision for the practice of preventive medicine, and groups large enough to reduce handling costs to a minimum. The employer-employee relationship is the keystone of the arch of production, which must be increased if the economy is to enjoy improved standards of medicine, improved standards of health, and improved standards of living.

Further, we believe that there should be a number of different plans available through a number of different facilities. We believe that competition among the several plans that may become available will achieve the best final results for the greatest number of people.

We are convinced that unless this problem can be met at a "public service" level by both the insurance companies and the doctors seeking a solution without regard to their selfish interests, socialized medicine will be the inevitable outcome.

Motivated by these thoughts we respectfully make the suggestion to the Massachusetts Medical Society that it consider favorably the proposition that it work to develop a plan of action under which the resources, facilities and experience of the insurance companies would be enlisted in a co-operative effort to achieve a practical solution to the need of the people for an extension of nonoccupational accident and health insurance within the framework of our existing economic society.

Very truly yours,
[Signed] S. Bruce Black
S. Bruce Black, *President*

The President said that the Executive Committee had reviewed these communications and recommended that they be referred to the Committee on Public Relations, with the suggestion that a subcommittee be set up by that committee for the purpose of the study outlined in them.

It was moved that the recommendation of the Executive Committee be adopted. This motion was seconded, and it was so ordered by vote of the Council.

Two communications received by the Secretary were presented to the Council. One (Appendix No. 8) was from Dr. George F. Lull, secretary of the American Medical Association, and the other (Appendix No. 9) was from Dr. Frank H. Lahey, chairman of the Directing Board, Procurement and Assignment Service.

The President said that these letters were informational and required no action by the Council.

Appointments

The President then announced the following *ad interim* appointments:

To the Council:

Dr. Fred A. Bartlett, Norfolk South, to take the place of Dr. Charles S. Adams, deceased.
Dr. Joseph H. Carey, Norfolk, to take the place of Dr. Henry M. Landesman, deceased.
Dr. Franklyn P. Bousquet, Worcester, to take the place of Dr. John J. Dumphy, resigned.
Dr. Eugene L. Richmond, Worcester, to take the place of Dr. Gordon Berry, resigned.

To the Board of Censors:

Dr. Fred A. Bartlett, Norfolk South, as supervisor, to take the place of Dr. Charles S. Adams, deceased.
Dr. Paul P. Henson, Barnstable, as supervisor.

To the Executive Committee of the Council:

Dr. Franklyn P. Bousquet, Worcester, as alternate, to take the place of Dr. John J. Dumphy, resigned.

To the Committee on Membership:

Dr. Samuel N. Vose, Suffolk, as chairman *pro tempore*, to take the place of Dr. Harlan F. Newton, resigned.
Dr. Peirce H. Leavitt, Plymouth, as chairman, to take the place of Dr. Vose.
Dr. Lewis S. Pilcher, Middlesex South.

To the Committee on Nominations:

Dr. Franklyn P. Bousquet, Worcester, as alternate, to take the place of Dr. John J. Dumphy, resigned.

To the Committee to Confer with the Massachusetts Farm Bureau Federation:

Dr. Elmer E. Thomas, Hampshire, to take the place of Dr. Joseph D. Collins, resigned.

To the Committee to Confer with the Massachusetts Hospital Association:

Dr. Nicholas S. Scarcello, Worcester, to take the place of Dr. John Fallon, resigned.

To the Committee on Postpayment Medical Care:

Dr. Elmer E. Thomas, Hampshire, to take the place of Dr. Joseph D. Collins, resigned.

To the Committee on Tax-Supported Medical Care:

Dr. Thomas Hunter, Worcester, as chairman, to take the place of Dr. John J. Dumphy, resigned.

To the Committee to Meet with General Hawley:

Dr. James K. Bragger, Norfolk, to take the place of Dr. John J. Dumphy, resigned.

To the Committee to Study Revision of Salaries of Employees of the Society:

Dr. Charles J. Kickham, Norfolk, *chairman*.
Dr. Robert W. Buck, Middlesex South.
Dr. Robert N. Nye, Suffolk.

To the Committee to Study the Income Level of Blue Shield:

Dr. Charles F. Wilinsky, Suffolk, *chairman*.
Dr. Norman H. Bruce, Middlesex South.
Dr. Raoul L. Drapeau, Middlesex North.
Dr. Henry L. Kirkendall, Worcester.
Dr. John W. Spellman, Norfolk.

To the Committee to Study Increase in Assessment of Dues:

Dr. Frank R. Ober, Suffolk, *chairman*.
Dr. N. Newall Copeland, Berkshire.
Dr. Edwin D. Gardner, Bristol South.
Dr. Kenneth L. Maclachlan, Middlesex East.
Dr. John W. McKoan, Worcester.

To the Subcommittee on National Legislation:

Dr. Elmer S. Bagnall, Essex North, *chairman*.
Dr. Reginald Fitz, Suffolk.
Dr. James C. McCann, Worcester.
Dr. Michael A. Tighe, Middlesex North.

To the Subcommittee on Veterans Affairs:

Dr. Charles Bradford, Suffolk.
Dr. Stephen Brown, Hampshire.
Dr. William M. Carr, Plymouth.
Dr. Leo R. Desmond, Norfolk.
Dr. Spencer C. Flo, Franklin.
Dr. Merrill F. Gardner, Bristol South.
Dr. Willis N. Gowen, Middlesex East.
Dr. Leonard W. Hill, Bristol North.
Dr. Sheldon L. Hunt, Barnstable.
Dr. Thomas Hunter, Worcester.
Dr. John C. McGirr, Middlesex South.
Dr. Frank P. Morse, Jr., Essex South.
Dr. F. K. Paddock, Berkshire.
Dr. Ensio K. F. Ronka, Norfolk South.
Dr. Louis B. Simard, Essex North.
Dr. Thomas J. G. Tighe, Middlesex North.

To the Council of the New England State Medical Societies:

Dr. Norman A. Welch, Norfolk, to take the place of Dr. Dwight O'Hara, resigned.

In reference to the Committee on Veterans Affairs, Dr. Curley asked who represented Worcester North. The President said he would look this matter up after the meeting and let Dr. Curley know. Dr. Curley said he asked the question because as the list was read there was no one accredited to that district. The President said he would correct that situation within twenty-four hours.

The President's appointments were confirmed by vote of the Council.

New Business

Dr. Bagnall moved that the committee appointed to meet with General Hawley with a view of formulating a program in Massachusetts for the medical care of veterans and their dependents be reorganized so as to consist of five members among whom would be adequate representation of the Blue Shield. This motion was seconded.

There was some discussion whether or not the motion should be referred, under the Council rules, to the Committee on Public Relations. Dr. Hornor expressed the thought that it should be so referred on the basis that the committee in question was a subcommittee of the Committee on Public Relations. Dr. McCarthy said that this committee was a special committee.

The President ruled that the motion would not be put to the Council, and in so ruling he said that it was within his province to act on the subject matter of the motion without a formal vote by the Council. The Council acquiesced in the ruling.

There being no further business before the Council, the President announced it adjourned at 12:50 p.m.

Michael A. Tighe, *Secretary*

APPENDIX NO. 1

Attendance of the Councilors

Barnstable
P. M. Butterfield

Berkshire
I. S. F. Dodd
C. F. Kernan
Helen M. Scoville

Bristol North
W. H. Allen
M. E. Johnson
W. J. Morse
J. L. Murphy
W. M. Stobbs

Bristol South
R. B. Butler
J. C. Corrigan
E. D. Gardner
Henry Wardle

Essex North
E. S. Bagnall
R. V. Baketel
G. J. Connor
Elizabeth Councilman
N. F. DeCesare
H. R. Kurth
P. J. Look
G. L. Richardson
F. W. Snow

Essex South
D. S. Clark
R. E. Foss
C. A. Herrick
P. P. Johnson
W. G. Phippen
E. D. Reynolds
J. R. Shaughnessey
H. D. Stebbins
P. E. Tivnan
C. F. Twomey
C. A. Worthen

Franklin
A. W. Hayes

Hampden
E. P. Bagg
A. J. Douglas
E. C. Dubois
Adolph Franz, Jr.
P. E. Gear
G. D. Henderson
Charles Jurist
G. L. Schadt
J. A. Seaman
W. W. Teahan

Hampshire
H. A. Tadgell

Middlesex East
J. L. Anderson
Robert Dutton
W. H. Flanders
R. W. Layton
K. L. Maclachlan
M. J. Quinn
W. F. Regan
R. R. Stratton
J. M. Wilcox

Middlesex North
R. L. Drapeau
D. J. Ellison
A. R. Gardner
W. F. Ryan
M. A. Tighe
W. L. Twarog

Middlesex South
E. W. Barron
Harris Bass
J. M. Baty
W. O. Blanchard
G. F. H. Bowers
Madelaine R. Brown
R. N. Brown
R. W. Buck
E. J. Butler
J. F. Casey
C. W. Clark
J. A. Daley
H. F. Day
C. L. Derick
J. G. Downing
F. W. Gay
V. A. Getting
H. G. Giddings
Eliot Hubbard, Jr.
A. A. Levi
A. N. Makechnie
R. A. McCarty
J. C. Merriam
Dudley Merrill
C. E. Mongan
G. M. Morrison
J. P. Nelligan
Dwight O'Hara
Fabyan Packard
L. S. Pilcher
Max Ritvo
M. J. Schlesinger
E. W. Small
J. E. Vance
A. L. Watkins
B. S. Wood
Hovhannes Zovickian

Norfolk
A. A. Abrams
B. E. Barton
Carl Bearse
J. H. Cauley
D. J. Collins
G. L. Doherty
Albert Ehrenfried
H. M. Emmons
Susannah Friedman
J. B. Hall
H. B. Harris
R. J. Heffernan
P. J. Jakmauh
I. R. Jankelson
C. J. E. Kickham
D. L. Lionberger
D. S. Luce
H. L. McCarthy
Hyman Morrison
J. J. O'Connell
W. R. Ohler
G. W. Papen
H. A. Rice
J. A. Seth
J. A. Sieracki
S. L. Skvirsky
E. C. Smith
Kathleyne S. Snow
J. W. Spellman
A. R. Stagg
W. J. Walton

Norfolk South
F. A. Bartlett
Harry Braverman
Frederick Hinchliffe
E. K. Jenkins
N. R. Pillsbury
D. B. Reardon
H. A. Robinson
R. G. Vinal

Plymouth
J. C. Angley
A. L. Duncombe
H. H. Hamilton
P. H. Leavitt
R. C. McLeod
G. A. Moore
B. H. Peirce

Suffolk
H. L. Albright
A. W. Allen
W. H. Blanchard
W. J. Brickley
W. E. Browne
A. M. Butler
A. J. A. Campbell
David Cheever
J. F. Conlin
Pasquale Costanza
Maurice Fremont-Smith
Joseph Garland
John Homans
A. A. Hornor
L. M. Hurxthal
H. A. Kelly
R. I. Lee
C. C. Lund
Donald Munro
F. R. Ober
F. W. O'Brien
J. P. O'Hare
L. E. Parkins
Helen S. Pittman
J. H. Pratt
W. H. Robey
H. F. Root
R. M. Smith
Augustus Thorndike
J. J. Todd
S. N. Vose
Conrad Wesselhoeft

Worcester
C. R. Abbott
A. W. Atwood
F. P. Bousquet
J. J. Cohen
G. R. Dunlop
W. J. Elliott
John Fallon
L. M. Felton
R. H. Goodale
Thomas Hunter
H. L. Kirkendall
J. A. Lundy
D. K. McClusky
J. M. Olson
F. A. O'Toole
R. S. Perkins
E. L. Richmond
N. S. Scarcello
J. J. Tegelberg
G. C. Tully
B. C. Wheeler

Worcester North
H. C. Arey
J. J. Curley
J. V. McHugh
J. G. Simmons

APPENDIX NO. 2

Report of the Committee on Legislation

In the field of federal legislation a statement of the attitude of the Massachusetts Medical Society on Senate 1606 was sent by the special Subcommittee on Federal Legislation (Drs. Reginald Fitz, E. S. Bagnall, Dwight O'Hara, M. A. Tighe and J. C. McCann), to the United States Senate Committee holding hearings on this bill. This statement outlined the basic principles of adequate medical care as adopted by our society. It pointed out the shortcomings of Senate 1606, and gave reasons for disapproving the bill. This subcommittee continues to function in all matters pertaining to federal legislation.

In the field of state legislation, the end of the 1945–1946 session of the General Court brought a successful conclusion to our efforts. A total of eighty-four bills were considered, of which thirteen were approved and sixteen opposed. A brief statement of the disposal of some of the more important bills may be of interest.

The three antiviviseetion bills (H. 117, H. 1339 and H. 1340) were defeated. Opposition to these bills was ably handled by a special committee consisting of Dr. John Conlin (chairman), of Tufts Medical School, Dr. Charles Lund, of Harvard Medical School, Dr. George Maison, of Boston University School of Medicine, and Rev. Father McGowan, of the Associated Catholic Hospitals.

A bill (S. 46, later H. 1875), to establish a special board for licensing chiropractors, was defeated in the House. An adverse committee report was given on a similar bill (H. 601) to establish a board of osteopathy.

A bill (S. 45) to open hospitals to all licensed physicians was defeated in the Senate.

The four bills (S. 118, S. 263, H. 299 and H. 301) to give graduates of Middlesex Medical School since January 1, 1944, the right to take examinations for license to practice in Massachusetts were replaced by a bill that restricted this privilege to men who, when medical students, were citizens of Massachusetts. This bill, which applies to some twenty-eight men, has become a law. Since Massa-

chusetts students are now provided for, all future legislation directed against the Approved Act may be successfully opposed.

A bill (H. 1822), which exempted veterans from legislation enacted since September 16, 1940, in respect to boards of registration and which adversely affected the Approval Act, was reported out of a conference committee of the Senate and House, with the section applying to the professions deleted. With this deletion the bill was passed by the Legislature to become Chapter 577 of the Acts of 1946.

Of the four bills (S. 404, S. 405, and S. 406 and S. 407) to revoke the charters of nonfunctioning or substandard medical schools, only S. 407, which revoked the charter of the College of Physicians and Surgeons as of 1949, was passed.

A bill (H. 230), initiated by Dr. Gallupe, of the Massachusetts Board of Registration in Medicine, was passed. This bill enables Massachusetts to have license reciprocity with other states.

The attitude of the members of the General Court toward the Massachusetts Medical Society is becoming increasingly co-operative. Most legislators now realize that our efforts are directed toward maintaining high standards of medical practice as an important means of safeguarding the public health. Much of this goodwill may be attributed to the well directed educational efforts of our legislative counsel, Mr. Charles Dunn.

DAVID L. BELDING, *Chairman*

APPENDIX NO. 3

REPORT OF THE COMMITTEE ON PUBLIC RELATIONS

The Committee on Public Relations recommended that the President appoint a representative of the Massachusetts Medical Society to help the Academy of Pediatrics survey of facilities and need for facilities in the care of children. This question had been referred to the Committee on Public Relations by the Council of the Massachusetts Medical Society at its meeting on May 21, 1946. After the adoption of the motion President O'Hara announced that he would appoint Dr. David Sherwood as representative of the Massachusetts Medical Society to help the proposed survey of the Academy of Pediatrics.

The Committee on Public Relations accepted, with thanks, Dr. Ellison's report as chairman of the Subcommittee to Consult with the Advisory Committee of the Industrial Accident Board and this report has since been circularized to the members of the Massachusetts Medical Society.

The question of having a Woman's Auxiliary to the Massachusetts Medical Society was referred back for further investigation to the subcommittee appointed to study this question.

The Committee on Public Relations discussed the letter submitted by Dr. Shields Warren, of the New England Deaconess Hospital, in protest against the paying by insurance companies of ward rates, since these rates are set at less than the cost of caring for the patient. After much discussion the committee decided that this is a problem for the Massachusetts Hospital Association and asked to be relieved of further duties in connection with this letter.

ALBERT A. HORNOR, *Secretary*

APPENDIX NO. 4

REPORT OF THE COMMITTEE TO MAKE A SURVEY OF MALPRACTICE INSURANCE IN MASSACHUSETTS

Two meetings were held; the second was attended by the chairman of the Committee on Medical Defense. Discussions were held with representatives of several insurance companies, and considerable data were obtained from the Insurance Department at the State House.

Group malpractice insurance as such cannot be written in Massachusetts. An opinion rendered by the Attorney General in 1923 stated, "A group or blanket policy of liability insurance may not be issued to an association of dentists or physicians."

There are at least ninety-four insurance companies authorized to write malpractice insurance in this state, but no information is available at present to indicate which companies engage in this type of underwriting. About nine companies are probably doing most of this business. The Medical Protective Company, the U. S. Fidelity and Guaranty Company, and the Lumbermen's Mutual Casualty Company probably underwrite the largest number.

We understand that a considerable number of physicians in the Massachusetts Medical Society carry no insurance at all; some are apparently content to be defended by the Society and pay the cost of settlements, or judgments awarded by the court or jury, themselves. Others, chiefly graduates of unapproved medical schools, cannot obtain such insurance.

The premiums charged by those companies from whom we have been able to get figures are not uniform. It was stated that their premium rate is based on their experience in the Commonwealth. For example, for the same type of insurance for which the Medical Protective Company charges $19 in Massachusetts, this same company charges $16 in Pennsylvania. A company starting to underwrite malpractice insurance in a new territory may feel they can begin with a lower rate than charged by companies doing business for some time. But whether they can maintain such a rate will depend on their subsequent experience.

The Hartford Accident and Indemnity Company suggested the establishment of a committee within the Society to advise both the doctor, against whom a claim has been made, and the representative of the insurance company. This committee would study all claims or possible claims and advise both physician and insurance company as to the method to be pursued. According to their representative, New Hampshire has such a committee and has been able in seven years to reduce the cost of insurance for a surgeon with $5,000/15,000 limits from $60 to $30 a year. The Medical Defense Committee of our society is consulted only by physicians carrying *no* malpractice insurance. Incidentally, should a plan similar to the New Hampshire one be adopted, the Hartford Accident and Indemnity Company will be glad to write policies subject to limits of $10,000/30,000 at annual premiums of $25 for general practitioners (exclusive of major surgery), $32 for surgeons, and $74 for x-ray specialists. This company will not differentiate as regards school but every applicant is checked by a credit bureau.

The American Policyholders' Insurance Company submitted a plan:

All members of good standing in the Society would be eligible.

No minimum or maximum number of members would be required.

The rates at the beginning would be as follows:

LIMIT	GROSS RATE	NET RATE (15% dividend)
$10,000/ 30,000	$20	$17.00
15,000/ 45,000	22	18.70
20,000/ 60,000	24	20.40
25,000/ 75,000	26	22.10
50,000/150,000	28	23.80
100,000/300,000	30	25.50

These rates would be applied to all physicians and surgeons except those giving x-ray therapy, in which case the rates would increase 50 per cent. The above quoted rates are subject to a dividend of 15 per cent, which the company has paid to policyholders with this type of insurance uninterruptedly since its inception.

The procedure which they would employ is to be based on an agreement with the Society covering all features of the plan and individual policies are to be issued to each subscribing member. They will group the experience from time to time of the individual members as one unit and use the experience as the basis for rate adjustments. No physician other than a member of the Society would be eligible for insurance in this unit. After a period of twenty to twenty-two months, they expect to be able to judge their experience and will make revisions accordingly. The representative of the company feels that under this method of operation the members of the Society "could look forward with optimism to reduced rates from time to time while this plan is in operation." The company states they have been insuring physicians, dentists, and hospitals for many years and that they have written many county societies and specialist societies as groups. They are presently negotiating with some twenty-four medical societies.

The Lumbermen's Mutual Casualty Company, which has been writing malpractice insurance for over eight years in Massachusetts, submitted the following proposition:

$5,000/15,000 coverage to the general practitioner for $25 the first year.

A 20 per cent dividend would bring the second-year cost down to $20.

If one third of the membership of the Society is secured, they will give an additional $5 discount, which will make the net cost $15 per year.

This applies to general practitioners only. No figures were furnished as to surgeons and radiologists.

The Medical Protective Company has reduced its limits to $5,000/15,000. They state that the larger limits carried by physicians made the malpractice situation worse. They feel that it increases the activity of the damage-suit lawyers and that this interest will lessen with smaller insurance targets, that it centers the attention of courts and juries on the question of insurance rather than on the issues in the trial, that it creates fictitious estates far beyond the actual means of the professional men carrying them, that it serves to invite large verdicts when there was no occasion for them, that it handicaps, or makes impossible, any reasonable compromises in difficult situations where such compromises are desired by the assured, that it increases rather than decreases the actual protection of a doctor and creates insurance for the damage-seeking plaintiff. To follow this line of thought still further, it may be argued that any indemnity insurance may encourage the bringing of actions. The plaintiff and his attorney may feel that any suit, if an insurance company is back of a physician, has a nuisance value. Relatively few suits against physicians when defended by a state medical society have been won in court.

The Medical Protective rates are as follows:

TYPE OF PRACTICE	LIMIT	RATE
Restricted surgery	$2,500/ 7,500	$19
Restricted surgery	5,000/15,000	22
Unrestricted surgery	2,500/ 7,500	25
Unrestricted surgery	5,000/15,000	30

Companies writing malpractice insurance in Massachusetts have to file an annual report at the State House. Since all companies except the Medical Protective handle various types of insurance and "lump" their figures, only the Medical Protective figures are presented, as follows:

DATE	INCOME	DISB.	NET PREMS. WRITTEN	NET LOSSES	TOTAL ASSETS	SURPLUS TO POLICY HOLDERS	PERCENTAGE LOSSES INCURRED TO PREMS. EARNED
1945	$794,494	$702,603	$717,747 *46,850	$133,178 *11,405	$2,767,886	$832,333	30.30
1944	726,369	674,047	647,809 *41,641	157,356 *13,117	2,675,482	787,607	15.84
1943	(Figures not available as statement is in hands of binder.)						
1942	814,449	739,353	737,267 *48,761	242,123 *10,720	2,596,210	689,663	29.58
1941	921,095	1,283,343	829,343 *57,407	344,546 *15,759	2,520,434	663,725	31.69
1940	987,730	1,114,908	894,525 *62,785	417,167 *24,317	2,883,700	928,569	35.67

*These figures indicate Massachusetts business.

The United States Fidelity and Guaranty Company begins coverage from $10,000/30,000. Their rates vary according to specialty, ranging from $19 to $70, and they state that 40 per cent of their clients in Massachusetts qualify for the basic rate of $19. This company has agreed to a 5 per cent decrease for all specialists, except x-ray. This company is carrying hundreds of policies written in excess of $10,000/30,000. A great many carry $50,000/150,000 and some are insured for $100,000/800,000. This company entertains applications from graduates of unapproved schools who hold membership in the Society.

In evaluating the relative merits of companies writing malpractice insurance, factors other than their financial stability and rates must be considered. The experience and ability of their legal counsel are important, since malpractice suits are a highly specialized type of legal work. Experienced agents may possibly also be of value. It must not be overlooked, however, that these agents usually work on a commission and that this commission is added to the cost of the premium.

In view of the record of successful defense of suits by state medical societies, the advisability of the Massachusetts Medical Society undertaking its own indemnity insurance deserves consideration. This idea is not new; it was mentioned by Dr. Arthur W. Allen in his report of the Committee on Medical Defense to the Council on February 6, 1946, and by Dr. Walter P. Bowers at a Council meeting twenty-five years ago.

This report is submitted as one of progress. Much more fact finding and study is necessary before recommendations can be made.

CARL BEARSE, *Chairman*

* * *

The committee submitted a supplementary report giving data on the Mutual Protective Company for the years 1930–1940 (Table 1).

TABLE 1. *Data on the Medical Protective Company (1930–1940).*

YEAR	TOTAL INCOME	TOTAL DISBURSEMENTS	MASSACHUSETTS PREMIUMS WRITTEN	MASSACHUSETTS LOSSES PAID	TOTAL ADMITTED ASSETS	SURPLUS	PERCENTAGE OF LOSSES INCURRED TO PREMIUMS EARNED
1930	$1,543,300	$1,398,938	$69,236	$47,800	$3,396,679	$1,214,054	55.74
1931	1,451,930	1,494,559	72,993	33,508	3,365,448	1,198,826	64.22
1932	1,361,513	1,345,901	72,214	46,205	3,345,652	1,168,144	64.07
1933	1,128,752	1,362,079	69,391	56,351	3,137,442	1,008,777	56.50
1934	1,034,507	1,333,460	66,887	52,140	2,874,778	1,072,585	61.63
1935	1,172,012	1,147,795	71,562	52,453	2,898,629	1,017,241	52.71
1936	1,187,099	1,282,005	71,150*	65,105*	2,803,067	1,011,760	52.33
1937	1,216,428	1,075,828	71,291	35,711	2,946,715	1,017,132	56.64
1938	1,155,163	1,195,981	72,762	39,939	2,903,328	914,009	52.95
1939	1,087,095	983,384	67,098	31,613	3,007,819	925,988	54.87
1940	987,730	1,114,908	62,785	24,317	2,883,700	928,569	35.67

*This and the later figures are *net*; those preceding are *gross*.

APPENDIX NO. 5

PROGRESS REPORT OF THE COMMITTEE TO MEET WITH GENERAL HAWLEY WITH VIEW OF FORMULATING PROGRAM IN MASSACHUSETTS FOR MEDICAL CARE OF VETERANS AND THEIR DEPENDENTS

The fee schedule approved by the Council of the Massachusetts Medical Society on April 10, 1946, was forwarded to the Veterans Administration in Washington.

Word has been received from the Administration which alters only the form that this schedule should take. No criticism of the fees submitted was offered.

This communication indicated that a fee schedule should be submitted on two forms: one to cover outpatient service and the other to cover service to veterans while confined to their homes or to hospitals. The form covering the former service accompanied this communication. It is herein reproduced.

FEE SCHEDULE FOR OUTPATIENT SERVICE

Submitted to Veterans Administration
By:

CLINICAL LABORATORY TESTS

(1) Total and differential blood count including colorimetric hemoglobin estimation
(2) Blood smear for malaria
(3) Urinalysis, routine chemical and microscopic
(4) Blood Wassermann (complement-fixation)
(5) Blood Kahn (precipitation)
(6) Spinal-fluid Wassermann (complement-fixation)
(7) Spinal-fluid Kahn (precipitation)
(8) Chemical examination of blood complete, including creatinine, urea, dextrose, nitrogen (or NPN) and uric acid
(9) Sputum examination for tuberculosis (plain smear)
(10) Determination of basal metabolic rate

SERVICES BY NONSPECIALISTS

(11) Examination to determine need of hospitalization
(12) Complete general routine physical examination
(13) Office visit with treatment
(14) Day visit to home or hospital (within city limits)
(15) Night visit to home or hospital (9:00 p.m.–7:00 a.m.) (within city limits)
(16) Charge for mileage one way for day or night visit outside city limits in addition to appropriate fee

EXAMINATIONS BY SPECIALISTS

(17) General surgical
(18) Orthopedic
(19) Physical examination of heart
(20) Complete examination of heart, including electrocardiogram
(21) Electrocardiogram with interpretation
(22) Physical examination of lungs
(23) X-ray of lungs, flat plate
(24) X-ray of lungs, stereoscopic
(25) Gastrointestinal, including barium meal, x-ray and fluoroscopy
(26) Dermatological
(27) Allergy investigation (protein sensitization tests) including complete examination and report:
For each 25 tests
(28) Genitourinary examination without cystoscopy
(29) Gynecological
(30) Proctological
(31) Psychiatric examination, complete
(32) Neurological examination, complete
(33) Examination of ears, nose and throat
(34) Special ear examination, including audiometric test with chart
(35) Special ear examination, including caloric or Barany test with report
(36) Examination of eyes (to include either a copy of the prescription ordered or the retinoscopic correction of the refractive error, the fundus and field findings — the latter by chart in all cases of optic atrophy)
(37) Examination of eyes with refraction, if mydriatic is used (to include either a copy of the prescription ordered or the retinoscopic correction of the refractive error, the fundus and field findings — the latter by chart in all cases of optic atrophy)
(38) Examination by internist to determine diagnosis

TREATMENT BY SPECIALISTS

(39) Dermatological: first visit
(40) Dermatological: each subsequent visit
(41) Ear, nose and throat: first visit
(42) Ear, nose and throat: each subsequent visit
(43) Ophthalmological: first visit
(44) Ophthalmological: each subsequent visit
(45) Psychiatric treatment (psycho-therapeutic conference), session of at least 50 minutes
(46) Psychiatric treatment (psycho-therapeutic conference), session of 25 minutes or less
(47) Neurological treatment (treatment is understood to be the usual follow-up care and observation after diagnosis has been made at original neurological examination)
(48) Intravenous sodium amytal procedure

STANDARDS FOR NEUROPSYCHIATRISTS TO BE DESIGNATED FOR THERAPY PSYCHIATRISTS:

Qualifications:

a. Certified in psychiatry by American Board of Psychiatry and Neurology, or
b. Possession of one of following ranks in an accredited medical school.
1. Any professorial rank in psychiatry.
2. Associate in psychiatry.
c. Experience:
1. At least four years of two half days a week in an accredited mental hygiene clinic or similar institution in which modern therapeutic principles and techniques were practiced, or
2. Certification by the American Psychoanalytical Association and four years' practice of psychiatry using this, or other, forms of modern psychiatric treatment, or
3. Two years' certified training and experience in the armed forces or in any other accredited institution in which intensive individual therapy was practiced and taught, with two additional years of similar practice, either private or institutional.

NEUROLOGISTS:

Qualifications:

a. Certification in Neurology by American Board of Psychiatry and Neurology.

We were informed by the Veterans Administration that the form which had to do with service rendered to veterans while confined to their homes and hospitals would be received later.

The committee calls attention to the fact that the completion of the form submitted and herein reproduced makes it mandatory that the Society distinguish between the specialist and the nonspecialist, except in regard to psychiatrists and neurologists, in which instances the Veterans Administration itself sets the qualifications.

The committee is very much aware of the difficulties which attend such a differentiation. It is its opinion that such differentiation is not within the scope of its authorization. It therefore finds it necessary to submit three questions to the Council: Shall such a differentiation be made? How shall it be arrived at? What formula shall be used whereby the fees paid to the specialist shall be differentiated from those paid to the general practitioner?

The committee has given much thought to this difficult subject. For the purposes of facilitating the discussion attending it, it submits two ideas with regard to the second question, provided the first question is answered in the affirmative. These are as follows:

A suitable questionnaire be submitted to each member of the Society asking him to designate into which one of these two groups he believes he should be placed. (This method has been pursued by the Medical Service Administration of New Jersey.)

To designate as specialists all those so certified by the specialty boards, those physicians who state that they limit their practice to a special field or who practice a specialty in an approved hospital as a member of that hospital's regular staff.

With regard to the third question, again for the purposes only of facilitating discussion, the committee submits the following idea:

That the schedule of fees approved by the Council on April 10, 1946, be regarded as specialists' fees and that, when the services called for in this schedule are rendered by general practitioners, the compensation shall be 20 per cent less than that set forth in that schedule. If the Council should adopt some such formula as this, it is necessary that the committee be allowed a leeway, not to exceed 5 per cent, so that the fees finally set down for the general practitioner shall appear in round numbers.

The committee, in its report to the Council on April 20, 1946, recommended that the Blue Shield be the administrative agency in Massachusetts for the plan which concerned itself with the medical care by the civilian doctor of those for whom the Veterans Administration is responsible. The Council will remember that this type of administration was contrasted with that adopted by the Kansas State Medical Society. Under the latter plan, the Veterans Administration was its own administrative agent, the Society limiting itself to supplying the agency with a list of physicians willing to serve under schedule of fees agreed on and to maintain a close liaison with the Veterans Administration whereby the Administration would have the assistance of the Society in matters of dispute.

The Council adopted this recommendation made by the committee. The committee now recommends that this action of the Council be rescinded.

The committee is impelled to make this recommendation because of a distressing experience which the New Jersey Medical Service Corporation has had with an administrative plan similar to that approved by the Council on April 10, 1946.

In the event that the Council adopts this recommendation, the committee will recommend the approval of the Kansas Plan modified so as to provide that the Blue Shield shall act as the liaison between the Veterans Administration and the physicians rendering the service in Massachusetts.

In arriving at this latter recommendation the committee wishes to say that it has had only informal conversations with the Blue Shield on this subject.

The committee points out that until decisions are made with regard to these matters, its activities are at a standstill.

HUMPHREY L. MCCARTHY, *Chairman*
JAMES K. BRAGGER
MICHAEL A. TIGHE

APPENDIX NO. 6

REPORT OF THE COMMITTEE TO STUDY REVISION OF THE SALARIES OF THE EMPLOYEES OF THE SOCIETY

On May 21, 1946, a resolution was passed by the Council authorizing the President to appoint a special committee of three to study the matter of revision of the salaries of the employees of the Society and confer with the Committee on Finance. This committee was appointed and consists of Drs. Buck, Nye and Kickham.

Your committee met and has given careful consideration to the subject matter as contained in the resolution. It was noted that there were three salaried employees and two officers of the Society who were compensated directly by the Society. Your committee in studying the matter weighed the fact that the employees of the Society are not beneficiaries under the Social Security Act and are not covered by any pension plan.

Your committee is unanimous in the opinion that because of the increased cost of living, as indicated by all indices available, the compensation of the salaried employees of the Society who have been employed six months or more should

be increased by 20 per cent, retroactive to July 1, 1946. In the case of one employee who only recently joined the staff it is recommended to the proper committee that her salary be increased 20 per cent on January 1, 1947.

Your committee also gave consideration to the compensation received by the two elected officers, namely, the Secretary and the Treasurer, whose compensation is paid by the Society. It is well recognized that the business and responsibilities of the Secretary have increased manyfold in the last few years, and the same condition also prevails in the office of the Treasurer. In view of these facts, it is the considered opinion and recommendation of your committee that the compensation of the Secretary be increased from $3,000 to $4,000 per annum, and the compensation of the Treasurer be increased from $2,000 to $2,500 per annum, with increases retroactive to July 1, 1946.

Your committee recommends that an extraordinary appropriation be made to cover this increased compensation for the period from July 1 to December 31, 1946, in the amount of $1,332. The details of the recommended increases in compensation are as follows:

POSITION	PRESENT YEARLY COMPENSATION	RECOMMENDED YEARLY COMPENSATION	INCREASE IN 1946
Treasurer	$2,000	$2,500	$250
Secretary	3,000	4,000	500
Executive Secretary	4,000	4,800	400
Miss Gaston	1,820	2,184	182
			$1,332

These recommendations have been presented to the Committee on Finance, and have been approved by said committee.

CHARLES J. KICKHAM, *Chairman*
ROBERT W. BUCK
ROBERT N. NYE

APPENDIX NO. 7

REPORT OF THE MASSACHUSETTS REPRESENTATIVES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION. JULY 1–5, 1946

I present this report as the senior member of your delegation attending the meeting of the House of Delegates in San Francisco from July 1 to 5, 1946. There was a full attendance, despite the distance and difficult travel conditions.

This marked the first time that the newly authorized Section on General Practice had its delegate sit in on the deliberations. In the assignment of the various reference committees your representatives fared well — Walter Phippen to the important Committee on Miscellaneous Business, Dwight O'Hara to Sections and Section Work, Leland McKittrick to Medical Education, and others of us to other committees. As I stated in my report of last December, one cannot give too much praise and appreciation to the tremendous amount of earnest and intelligent work performed by these reference committees. They are the works or machinery, and make possible the really large amount of work done. The addresses of President Lee, President-Elect Shoulders and Speaker Fouts were all earnest, thoughtful and convincing, and on the usual high plane. These are all well worth reading and appear in the July 13 issue of the *Journal of the American Medical Association* (pages 905, 907 and 908).

The balloting for the Distinguished Service Award resulted in an overwhelming vote for the eminent physiologist from Chicago, A. J. Carlson; at the meeting held later on Tuesday evening he was given this award *in absentia*.

At this point one may mention Speaker Fouts, serving for the first time, he having been elected only last December at Chicago. He proved himself an able, efficient and eminently fair presiding officer. Speakers usually serve until they choose to resign, and this commonly is a matter of six or seven years (or more). He deserved re-election. California, however, had other ideas and proposed Dr. Goin, of Los Angeles, a most able man. The balloting resulted in the re-election of Fouts by the narrow margin of 90 to 77. California did not move to make it unanimous.

The usual long reports of the officers (Secretary, Trustees, Treasurer and various councils), reading of the bills and report from the Washington office of the American Medical Association, and the report of the Committee on Postwar Planning, filled up the morning of the first day. The details of all these reports should be read in the journals of July 6 and 20. They are much too long and detailed to lend themselves to easy summary. Also worth reading is the editorial on page 974 of the July 20 number.

On the afternoon of the first day, there were further long committee reports dealing particularly with rural medical service in the Middle West, Far West and South — the great open spaces. The usual amount of new business was offered and was referred to the various reference committees.

On the morning and afternoon of the second day, reports of the various reference committees were presented to be acted on then, or debated and referred back, a not uncommon procedure.

To show how deeply involved the American Medical Association is in industrial matters one should read the report of the Committee on Executive Session, with reference to the national bituminous wage agreements (pages 993, 994, 995 and 996 in the July 20 number of the *Journal of the American Medical Association*), which are of most vital importance in some parts of the country.

Wednesday, July 3, was an open date for the delegates except for the members of the various reference committees; there was no holiday for them. There was also no meeting of the delegates on Thursday morning.

On the afternoon of Thursday (the final day) all reference committees' reports, for the most part fairly long, were acted on, usually without much debate. Then came the reports of the chairman of the Board of Trustees, Dr. Sensenich, on the changes in organization of the American Medical Association in accordance with the recommendations of the Rich Public-Relations Report. This report had but just been received and was so long it could only be sketchily summarized. The following is essentially what transpired:

Changes in the organization of the American Medical Association in accord with the recommendations of the Rich Public Relations Report were approved by the House of Delegates.

The Bureau of Medical Economics is to be expanded with a leading economist employed to develop factual material in the field for use in the *Journal of the American Medical Association* and *Hygeia*.

The general manager is to have an executive assistant — an expert in the field of public relations — to interpret the activities of the various councils and bureaus to the public and medical profession.

The name of the Council on Medical Service and Public Relations was changed to the Council on Medical Service.

Although the title of the Council was shortened its field of operation and duties was enlarged. The Division of Prepayment Plans has definitely been placed under it; putting the Ten Point Program into actual practice is one of its major concerns. It will intensify its work in the field of professional relations extending the scope of the regional conferences and the "News Letters." The House of Delegates instructed it to develop the health-council idea and approved its recommendation for the creation of a speakers' bureau. The Washington office of the Council remains intact.

It was agreed that a special committee, not a reference committee, should be appointed to study, with the Trustees, this Rich report before the next session of the House of Delegates and bring in its recommendations. I particularly call to your attention the minutes of the third meeting on Thursday afternoon (page 999 *et seq.*) dealing with legislation and public relations.

The election of officers concluded the meeting. Olin West, for nearly twenty-five years the most efficient secretary of the American Medical Association, was unanimously elected president-elect. The affection and respect for this man among the delegates is difficult to express. He is most worthy of it. His remarks after the election are found on page 1004 of the July 20 number. These remarks were made entirely offhand, without notes, and clearly characterize the man and his ideals. They should be read.

The following are a few incidentals:

Hereafter there are to be two sessions a year of the House of Delegates, the mid-winter meeting to be held in Chicago.

The next meeting in 1947 (Centennial) is to be held in Atlantic City; 1948 in St. Louis; 1949 in New York City (provided the rates for the hiring of halls are not prohibitive).

A rising vote was called for on the Wagner–Murray–Dingell bill; it was unanimous: I observed no one sitting.

California and the San Francisco County Medical Society well deserve the hearty congratulations of the American Medical Association for their remarkable efficiency and open-handed generosity.

It was a good meeting, free from the element of pressure so noticeable last December at Chicago. It was felt certain that Congress would not act on the health bills this term, thereby giving the various voluntary prepayment methods a chance to get well under way.

DAVID D. SCANNELL

APPENDIX NO. 8

COMMUNICATION

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago 10
August 9, 1946

Dr. Michael A. Tighe, Secretary
Massachusetts Medical Society
Boston, Massachusetts

Dear Dr. Tighe:

At the recent meeting of the House of Delegates of the American Medical Association in San Francisco, a proposed amendment to the by-laws was submitted by Dr. James C. Sargent, Wisconsin. This was referred to the Reference Committee on Amendments to the Constitution and By-Laws, Dr. Lowell S. Goin, California, chairman. The Reference Committee in its report on the proposed amendment recommended that it be not adopted and suggested instead the adoption of the following resolutions. The report of the Reference Committee, including the resolutions, was adopted. The resolutions are as follows:

RESOLVED, That it is a policy of the House of Delegates that resolutions should be introduced at least thirty days prior to any meeting of the House; and be it further

RESOLVED, That such resolutions be published in the *Journal* and in the "Handbook of the House of Delegates," and be it further

RESOLVED, That the secretary of the Association be directed to write annually to the secretary of each constituent association requesting that all resolutions adopted by the said constituent association and requiring the attention of the House of Delegates of the American Medical Association be submitted to the secretary's office as far in advance of the meeting of the House of Delegates as may be possible, and that the secretary request that the communication be read in the House of Delegates of each constituent association; and be it further

RESOLVED, That the secretary be directed and authorized to secure sufficient assistance to mimeograph all resolutions submitted in compliance with this request so that each delegate may have in his possession at the opening of the House of Delegates copies of the resolutions to be introduced at that time.

This is being brought to your attention as a result of the adoption of the resolution.

Very sincerely yours,
[Signed] GEORGE F. LULL, M.D.
GEORGE F. LULL, M.D.
Secretary and General Manager

APPENDIX NO. 9

COMMUNICATION

FEDERAL SECURITY AGENCY
PROCUREMENT AND ASSIGNMENT SERVICE
Washington, June 10, 1946

Dr. Michael A. Tighe, Secretary
Massachusetts Medical Society
8 The Fenway, Boston, Massachusetts

Dear Dr. Tighe:

For practical purposes the functions of the Procurement and Assignment Service have been terminated and the activities of the several state offices brought to a close. The success of the program in meeting the needs of the armed forces without sacrificing the civilian population may be attributed directly to the patient and timeless devotion of many state committees and countless local advisers. Many of these committeemen and advisers are unknown to the Directing Board, except through the results of their efforts, and it would obviously not be practicable to undertake to communicate with them.

In a recent letter to each state chairman, I asked that the appreciation of the Directing Board be conveyed to all the state and local representatives whose full co-operation was essential to the ultimate achievement. The Directing Board, at its final meeting on May 17, 1946, resolved that the untiring efforts, kind tolerance and successful accomplishment of these state committee members and local advisers be commended to the appropriate professional state society for suitable recognition by the society.

I hope you will draw this recommendation to the attention of your society, and that it will be disposed to afford some such recognition.

Sincerely yours,
[Signed] FRANK H. LAHEY, M.D.
FRANK H. LAHEY, M.D.
Chairman, Directing Board

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Weekly Clinicopathological Exercises

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

BENJAMIN CASTLEMAN, M.D., *Associate Editor*

EDITH E. PARRIS, *Assistant Editor*

CASE 32501

PRESENTATION OF CASE

First admission. A sixty-seven-year-old housewife entered the hospital because of a lesion on the left side of the tongue. Except for a blood pressure of 190 systolic, 110 diastolic, physical examination and routine blood studies were negative. The urine had a specific gravity of 1.004 and 1.007 and contained few to many white cells per high-power field; there was a ++ test for albumin and no sugar. An epidermoid carcinoma (Grade II) of the tongue was resected, and the patient was discharged on the tenth postoperative day.

Final admission (eight months later). After operation the patient was examined regularly in the Tumor Clinic. A month before admission lymph nodes were palpated in the submaxillary regions and in the left side of the neck. The patient had no other complaints. There was no history of systemic disease other than hypertension.

Physical examination disclosed a palpable lymph node in the floor of the mouth. Beneath the left sternomastoid muscle lay a movable hard mass measuring 3.5 x 2.5 cm. A loud systolic murmur was audible in the mitral area.

The temperature was 98.6°F., the pulse 80, and the respirations 18. The blood pressure was 220 systolic, 130 diastolic.

Examination of the blood showed a hemoglobin of 11 gm. per 100 cc. and a white-cell count of 8000. The specific gravity of the urine was usually below 1.010, but registered 1.020 on one occasion. Tests for albumin ranged from 0 to +++. On admission the sugar reaction was orange. Many white cells per high-power field, often in clumps, were usually seen in the sediment. The fasting blood sugar was 286 mg. and the nonprotein nitrogen 70 mg. per 100 cc. In the x-ray films the heart was of normal size. An area of increased density extending from the left lateral chest wall had somewhat the appearance of an old infarct. An electrocardiogram was interpreted as representing left ventricular hypertrophy and strain.

During the preoperative course insulin was given. The blood sugar never fell below 220 mg. per 100 cc., but the urine tests remained green after the third day. With the administration of large amounts of fluid the nonprotein nitrogen stabilized between 60 and 70 mg. per 100 cc. The cholesterol was 284 mg. per 100 cc., and the chloride 98 milliequiv. and the carbon dioxide 26 milliequiv. per liter. A callus on the right foot infected with beta-hemolytic streptococci caused considerable local swelling for several days and was accompanied by a daily temperature of 100 to 101°F. From the eighth to the seventeenth day, 192,000 units of penicillin were given, and the drug was then discontinued. The temperature was normal from the fourteenth to the twentieth hospital day, when a radical dissection of the left side of the neck was carried out, with removal of several carcinomatous lymph nodes. On the following day the temperature rose to 102°F.; the pulse and respirations were rapid. The blood sugar was 500 mg. per 100 cc. and ranged from 360 to 600 mg. thereafter, despite dietary treatment and insulin. There were moist rales at both lung bases.

During the week following operation the temperature gradually fell to 100°F. The wound progressed satisfactorily, and the stitches were taken out on the twenty-eighth hospital day. There was a pocket of pus in its upper angle, from which a moderate number of colon bacilli and many colonies of *Staphylococcus aureus* were obtained on culture. Meanwhile, the nonprotein nitrogen had risen to 115 mg. per 100 cc., and the chloride and carbon dioxide had fallen to 90 and 21 milliequiv. per liter respectively. The patient was semistuporous, with fast, shallow respirations. A chest x-ray film was negative on the third postoperative day. By the tenth postoperative day the patient was in deep coma. Respirations were fast, shallow and gasping, and the nonprotein nitrogen had risen to 170 mg. per 100 cc. Death occurred on the same day.

DIFFERENTIAL DIAGNOSIS

DR. WILLIAM BECKMAN: It is evident from the record that the patient had at least three diseases that are potentially fatal: carcinoma, diabetes and nephritis. The problem seems rather to decide which of these was the most important and what the relation was between any or all of them. We do not have any trouble making the diagnosis of carcinoma of the tongue because we are kindly told that it was present — there was pathologic evidence in both tongue and lymph nodes. I do not believe that carcinoma of the tongue is apt to metastasize far away from the local site, and I therefore doubt that metastasis was closely connected with this patient's death.

Either one or both of the other conditions mentioned are likelier causes. We can make a diagnosis of diabetes because we have the usual criteria for that diagnosis: a high fasting blood sugar, accompanied by sugar in the urine. By and large, when one thinks of diabetes one thinks of a condition

that is occasioned by an inadequate supply of insulin. The body cannot make enough insulin to supply its needs, but a high blood sugar and glycosuria occur in other conditions not due to insulin lack, such as obesity with diabetes, which clears up when the patient reduces, and intercapillary glomerulosclerosis, which is a special pathologic entity, with diabetes as an associated symptom. It is also an associated symptom in other conditions, such as Cushing's disease, in which it is not affected by the administration of insulin so much as it is in diseases in which insulin lack is the primary disturbance. I think that this diabetes fell into the type not affected by insulin, because the patient was given a great deal of it, although we do not know how much, but the blood sugar was never brought below 200 mg. per 100 cc. which is about twice normal according to our laboratory.

We are also able to make the definite diagnosis of nephritis of some sort. The patient had high blood pressure, albuminuria and an elevated nonprotein nitrogen in the serum. Those three things are sufficient to make the diagnosis of nephritis, although they do not help much in deciding the type. Apparently, there was pus in the urine, which suggests pyelonephritis. I think that this is the most frequent kind of nephritis in a patient of this age, although vascular nephritis is certainly a close second. There is little to suggest primary glomerulonephritis. In any event, the patient had severe chronic nephritis. She had a severe infection during the hospital stay, and it is well known that infection accentuates both diabetes and nephritis. The final episode was one of coma, which occurs both in diabetes and in the terminal stages of nephritis, so that it is important to differentiate them. It is quite improbable that the patient had diabetic acidosis because she did not have acetonuria and because the carbon dioxide content of the blood, although slightly reduced, was only 21 milliequiv. per liter, which is the lower limit of normal and well out of the range of diabetic acidosis. I am therefore forced to the conclusion that the terminal episode was coma due to renal failure rather than to diabetes; this is further indicated by the marked rise in nonprotein nitrogen that occurred terminally. In such a situation, it is tempting to relate the two conditions, diabetes and nephritis, in terms of intercapillary glomerulosclerosis, but I do not see how that is possible on the basis of the information that is given. I hold to the principle that one cannot make the diagnosis of intercapillary glomerulosclerosis unless there are definite changes in the optical fundi — I used to believe that this was always true, but I was wrong. In one of these exercises, Dr. Earle Chapman* discussed a case — without preparation, by the way — and correctly made the diagnosis of intercapillary glomerulosclerosis on the basis of the association of diabetes and nephritis, in spite of the fact that the patient, whom I had taken care of during life, had normal fundi up to the time of death.

My diagnoses are cancer of the tongue, which presumably was not related to the terminal episode, diabetes, which did not produce the final coma, and chronic nephritis — presumably chronic pyelonephritis. I do not believe that I have enough evidence to make a diagnosis of intercapillary glomerulosclerosis.

DR. REED HARWOOD: Was this patient given large doses of insulin?

DR. BEVERLY TOWERY: Large doses were not given because the patient seemed to have a high penetration level for sugar. The dose was fairly low. The attempt was not made to get the blood sugar down much below 200 mg. per 100 cc.

DR. HARWOOD: After the operation did the blood sugar remain between 360 and 500 mg. per 100 cc.?

DR. TOWERY: Yes. It brought up the question in our minds whether the patient had acute disease in the pancreas following operation as a result of which the insulin supply had been suddenly reduced. Whether that is true or not I do not know. On the day before death she received a total of about 60 units of insulin in divided doses.

DR. HARWOOD: That is not a large dose for a person running such a high blood sugar.

CLINICAL DIAGNOSES

Uremia.
Nephrosclerosis.
Pyelonephritis.
Diabetes.
Hypertension.
Arteriosclerotic heart disease.

DR. BECKMAN'S DIAGNOSES

Cancer of tongue, with local metastases.
Chronic pyelonephritis, with uremia.
Diabetes mellitus.

ANATOMICAL DIAGNOSES

Acute coronary thrombosis, with cardiac infarction.
Nephrosclerosis.
Subacute pancreatitis, with fat necrosis.
Chronic cholecystitis and cholelithiasis.

PATHOLOGICAL DISCUSSION

DR. TRACY B. MALLORY: This patient was quite a museum of pathologic findings at autopsy. Dr. Beckman was correct in his prediction that the carcinoma of the tongue had nothing directly to do with her death. There were only regional metastases in the cervical lymph nodes. There was no extensive carcinomatosis. The kidneys, which were rather small and contracted, showed on microscopic examination a severe grade of arteriosclerosis. I think that the involvement was advanced enough to make it quite reasonable to assume that the

*Case Records of the Massachusetts General Hospital (Case 30351). *New Eng. J. Med.* 231:333-337, 1944.

patient died in uremia. There was another factor, however, that probably contributed to death and perhaps also to the renal insufficiency. There was a very large area of fresh infarction in the myocardium, with a thrombus of corresponding age in the left descending coronary artery. Sudden myocardial failure may have terminally increased the degree of renal failure.

The surprise of the autopsy was the pancreas. As soon as the abdomen was opened and the omentum reflected, it was noted that the undersurface of the omentum was dotted with yellowish cheesy areas. The pancreas itself was greatly enlarged, weighing about 400 gm., and was filled with yellow, cheesy masses. Grossly, no normal pancreatic tissue could be recognized, and microscopically only the smallest islets persisted here and there. It is tempting to assume that the diabetes was directly due to destruction of the pancreas. That is a relatively rare event. We see a great many cases of pancreatitis in which there is massive destruction of pancreas and in which no diabetes develops. On the other hand, there was no sugar in the urine during this patient's first hospital stay only eight months before the second entry, when she was proved to be severely diabetic. I therefore think that the evidence in this case is fairly good that pancreatic necrosis was the direct cause of the diabetes. As so often in pancreatitis, there was chronic infection of the gall bladder and cholelithiasis.

DR. TOWERY: How acute was the process in the pancreas?

DR. MALLORY: It was essentially old. There was nothing whatever in the clinical history, of course, from start to finish, to suggest an attack of acute pancreatitis, except perhaps the blood sugar.

DR. EDWARD BENEDICT: What would have happened if she had been given massive doses of insulin? Would she have improved?

DR. MALLORY: I think that she died of uremia, complicated by cardiac failure, and that neither the diabetes nor the cancer of the tongue was in any way responsible for death.

DR. BECKMAN: Would you not rather say that it was cardiac failure complicated by uremia, because of the fact that the nonprotein nitrogen rose so rapidly as a result of the congestive failure?

DR. MALLORY: That is a better way to put it. The lungs were markedly congested and edematous.

CASE 32502

PRESENTATION OF CASE

A twenty-seven-year-old married tripara, a night-club singer, entered the hospital complaining of severe, continuous lower abdominal pain.

Three hours before admission an uneasy feeling had begun in the lower abdomen accompanied by hot and cold sensations. Pain developed and became so intense that the patient was completely incapacitated. The most recent menstrual period had started six days before admission and was almost at an end. The patient had had intercourse before the onset of the period. There had been no intermenstrual bleeding or discharge. Periods occurred every twenty-eight days, lasting about a week. There had been no frequency, urgency, hematuria or dysuria.

Five years before admission the patient had had a ruptured ectopic pregnancy. Ten years earlier the appendix had been removed.

Physical examination revealed a healed midline, suprapubic scar and a right paramedian scar. The abdomen was soft, with tenderness above the pubis. There were no masses. Blood was trickling from the cervical canal. There was a feeling of fullness in the right vault. Motion of the cervix caused severe pain. Rectal examination was negative except for pain on motion of the cervix.

The temperature was 100°F., and the blood pressure was 100 systolic, 60 diastolic.

Examination of the blood disclosed a red-cell count of 4,200,000, with a hemoglobin of 10.0 gm., and a white-cell count of 11,500. The urine was normal. No gram-negative cocci were seen on vaginal smear.

After the patient had been put to bed the pain rapidly improved and subsided completely. She felt better, but there was suprapubic tenderness. About two hours after admission a slight, constant lower abdominal pain began and was accompanied by slight spasm in the right lower quadrant. Three and a half hours after admission the pain was again severe, and a mass was felt by pelvic examination to the right of the uterus. The white-cell count had risen to 13,700, with 84 per cent neutrophils.

An operation was performed half an hour later.

DIFFERENTIAL DIAGNOSIS

DR. FRANCIS M. INGERSOLL: It is apparent from the history that an acute surgical emergency existed. A frequent condition that accounts for this type of history and physical findings is an ectopic pregnancy, which is suggested by certain outstanding findings in this case. First of all, the patient had a history of a previous ectopic pregnancy, and it is well known that a person who has had one ectopic pregnancy is liable to have a second. The suddenness of the onset of symptoms is also in favor of the diagnosis. The course in the hospital is not typical but fits in with what happens after an ectopic pregnancy ruptures. The lesion starts to bleed, the rupture seals off, the bleeding stops and on pelvic examination little is found. I remember a patient with ectopic pregnancy in whom examination failed to reveal bleeding. I told her to call me if anything happened. When I got home I had a

frantic telephone call saying that something had happened within ten minutes after I had left the patient's house. At operation she had a bleeding ectopic pregnancy. In the case under discussion, the patient had first an indefinite and later a definite mass, probably due to further hemorrhage. Also, exquisite tenderness on motion of the cervix was noted on both vaginal and rectal examination. That is characteristic of an ectopic pregnancy. Motion of the cervix causes motion of the partially ruptured ectopic pregnancy, and pain is elicited. This sign is not confined to ectopic pregnancy, however, being found in twisted cyst of the ovary or pelvic inflammation.

The red-cell count was slightly low, but I do not believe that that is a help in the final diagnoses. If it had been markedly lowered, we should be more convinced that the patient was bleeding intraperitoneally. I do not believe that the patient had bled enough to lower the red-cell count markedly. The white-cell count is consistent with ectopic pregnancy.

A few facts are against the diagnosis of an ectopic pregnancy. First, the patient had not missed a period. We know, however, that patients can have perfectly normal periods with pregnancy in the tube or ovary. Secondly, the only intercourse mentioned was immediately prior to the onset of the last period, and this statement implies that there had been no other intercourse in recent weeks, so that she could not have been pregnant.

What other conditions are possible? Pelvic inflammation due to gonorrhea comes to mind. The acuteness of the onset of pain, the lack of spasm and the fact that no gonococci were found in the vagina make it unlikely that the patient had pelvic inflammation. A rare condition is torsion of a normal fallopian tube. Twisted ovarian cyst can give all the same symptoms and is a possibility in this case. Against it is the fact that no discrete mass was felt at the first examination. Another possibility is a ruptured ovarian cyst accounting for the severe pain and the physical findings described. That is unlikely, however, and in conclusion I believe that this patient had an abdominal emergency that necessitated operation, and I believe that the most probable diagnosis is an ectopic pregnancy.

Clinical Diagnosis

Twisted ovarian cyst?
Pelvic inflammatory disease?
Ectopic pregnancy?

Dr. Ingersoll's Diagnosis

Ectopic pregnancy.

Anatomical Diagnosis

Ectopic pregnancy.

Pathological Discussion

Dr. Tracy B. Mallory: At operation a hemorrhagic mass was found at the fimbriated end of the right tube, the left tube and ovaries having been resected previously, as the history stated. There was approximately 300 cc. of blood in the abdomen. The tube was removed; the histologic examination showed numerous chorionic villi distributed in decidual tissue, a characteristic finding of tubal pregnancy.

Dr. George Clowes: A few points of interest are not brought out in the record. When the patient first came in, the mass described in the pelvis was not palpable. Both vaults were felt to be clear. Then, with the recurrence of pain, she was again examined, and a mass was thought to be felt by one examiner, although another observer was not able to confirm it.

Dr. Beverly Towery: Did she have hemorrhage into the broad ligament?

Dr. Clowes: The blood was free in the peritoneal cavity, and there was no hemorrhage in the broad ligament.

Dr. Howard Ulfelder: What was the duration of the pregnancy?

Dr. Mallory: I was trying to guess that. It could have been two weeks, although I am inclined to believe that it was longer than that.

The New England
Journal of Medicine

Formerly
The Boston Medical and Surgical Journal
Established 1828

Owned by the Massachusetts Medical Society and Published under the Jurisdiction of the Committee on Publications

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Subscription Terms: $6.00 per year in advance, postage paid, for the United States (medical students, $3.50 per year); Canada, $7.04 per year (Boston funds); $8.52 per year for all foreign countries belonging to the Postal Union.

Material should be received not later than noon on Thursday, two weeks before date of publication.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to the *New England Journal of Medicine*, 8 Fenway, Boston 15, Massachusetts.

CONFUSION WORSE CONFOUNDED

There are some famous lines in *Paradise Lost*, describing the flight of Satan's band,

> **. . . for such a numerous host**
> **Fled not in silence through the frighted Deep,**
>
> **With ruin upon ruin, rout on rout,**
> **Confusion worse confounded;**

that a year ago would have been considered particularly appropriate to the hosts, undoubtedly of evil, recently routed by the victorious United Nations; this year, although we are still certain of who was defeated, considerable doubt may be entertained regarding who is victor.

Scarcely more than a year ago our own nation, despite some industrial unrest, was a unified, integrated machine set to produce a single result — the maintenance of national security against dangers from without. Each man was at work, but his labors were for a purpose: he could put his hand upon his neighbor's shoulder and call him comrade — they were working toward a common goal. "Sweet," wrote Shakespeare, "are the uses of adversity"; we knew them then.

This year, frustration is in the atmosphere; we have no sun of York to shine on the winter of our discontent. Most of us are still hard at work, particularly the doctors of our acquaintance who meet no longer with a wartime forebearance on the part of a mutually striving clientele. But many are not working at all, a fumbling policy having put them on the dole; many veterans of all ages are unable again to become average citizens. Government control has broken down, and inflation is consuming reasonable profits. We are facing and failing to cope with materialism and moral disintegration within, and we are failing to accept world leadership without.

We are permitting the Great Patriot, the king of the coal fields, to hold his knife at the throats of a hundred and forty million Americans, mindless of the fact that the days of rugged individualism are over, and that no gain of great importance can be made by anyone without a co-operative effort on the part of those involved.

We are hard at work, — except for those who do not work at all, — but we are working without the solidarity that comes from working in a common cause. We have little patience with each other; we have lost our feeling of neighborliness. True, we share a common anxiety, but we are also victims of a common selfishness that will last until we again have a mutual goal to unite us in some constructive effort. That goal can consist of no material devices. Among ourselves and with the rest of the world, the most urgent issue on which to unite today is that of world peace. This is our desideratum. We shall not overcome our present insecurity until we can feel that we are striving, with other nations, for that end.

AN EYE FOR AN EYE

THE Massachusetts Eye and Ear Infirmary has laudably set up what is known as "The New England Eye Bank" which is affiliated with the Eye Bank for Sight Restoration, Incorporated, of New York City. In the minds of certain lay persons, however, there are two misconceptions regarding it. In the first place, there is the erroneous idea that *any* type of blindness can be cured by the substitution of a donor's eye. Secondly, it is rather widely believed that if an eye is not used within seventy-two hours it is completely wasted.

There is only one type of blindness that can be cured or improved in this manner, namely, that due to corneal opacities. Of the approximately 250,000 blind persons in this country, approximately 15,000 are blind because of corneal opacities. The latter stand a good chance of having their sight restored or improved by a corneal transplant from an eye removed within one hour of death and used within seventy-two hours. Although the group represents only a small percentage of those who are blind, the possibilities for beneficial results are impressive.

If the eye is not used within seventy-two hours, is it wasted? By no means. The eyes of mammals other than man are not entirely satisfactory for histologic, anatomic and physiologic studies, and yet such investigations must be carried out if the human race is to benefit. An intact human eye that could not be used for a corneal transplant might be ideal for certain studies, since it is presumably free from major defects and clearly has the properties common to other human eyes, except, of course, lack of circulation. Another important use for these eyes would be the training of ophthalmic residents in surgical procedures. This would be far superior to the present custom of employing animal eyes.

If these two misconceptions could be cleared up in the lay mind, the Eye Bank at the Massachusetts Eye and Ear Infirmary would probably prosper even better than it now does.

MASSACHUSETTS MEDICAL SOCIETY

DEATHS

BURGER — Franklin D. Burger, M.D., of Wellesley Hills, died November 25. He was in his forty-seventh year.

Dr. Burger received his degree from University of Michigan Medical School in 1936.

His widow survives.

SYLVESTER — Albie W. Sylvester, M.D., of Pittsfield, died June 20. He was in his eighty-fourth year.

Dr. Sylvester received his degree from Bowdoin Medical College in 1892.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

ANTIPNEUMOCOCCUS SERUM FOR SEVERE PNEUMOCOCCAL INFECTIONS

Occasional requests are still received by the Department of Public Health for antipneumococcus serum. Most of these relate to cases of pneumococcal meningitis, a disease with such a high fatality rate, even under optimal conditions, that serum is generally regarded as an imperative adjunct to chemotherapy. The department will therefore continue to furnish antipneumococcus serum until such time as serum has been found to be superfluous in the treatment of severe pneumococcal infections.

Because of the small number of requests, all serum depots have been discontinued except the one at the Bacteriological Laboratory, State House, where 100,000-unit vials of Types 1 to 33, inclusive, are kept available. The issue of serum will continue to be based on the following provisions:

The pneumococcus must be typed in a laboratory approved for this diagnostic procedure by the Department of Public Health or in a federal laboratory.

The patient must be suffering from pneumococcal pneumonia, septicemia, endocarditis, meningitis or peritonitis.

Serums for Types 1, 2, 4, 5, 7, 8, 9, 14 and 18 will be furnished for treatment of the above conditions on type identification of the pneumococcus, regardless of whether it has been isolated from the sputum, throat or elsewhere.

Serums for other types will be furnished only when the organism is found in the blood, cerebrospinal fluid or peritoneal fluid.

Unused serum must be properly refrigerated and returned as promptly as possible to the Division of Biologic Laboratories, 375 South Street, Jamaica Plain 30.

When the patient is discharged, a case history on the form provided must be filled out and sent to the Division of Biologic Laboratories.

CORRESPONDENCE

RESTORATION OF LICENSE

To the Editor: At the meeting of the Board of Registration in Medicine held November 22, it was voted to restore the certificate of registration of Dr. Theodore Rosen, formerly of 45 Joy Street, Boston.

H. QUIMBY GALLUPE, M.D., *Secretary*
State House
Boston

NOTICES

ANNOUNCEMENTS

Dr. Hugh C. Donahue calls attention to the omission of his office address and telephone number from the current telephone directory. His office continues to be at 520 Commonwealth Avenue, Boston, and the telephone number is COMmonwealth 2010.

Dr. William T. Haley, Jr., who has returned from military service, announces the opening of his office for the general practice of medicine at 79 Pleasant Street, Marblehead.

(Notices continued on page xvii)